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ORIGINAL ESSAYS.

ESSAYS AND PAPERS ON THE WINTER EPIDEMIC OF 1812-13-14, WITH EDITORIAL REMARKS.

(Concluded from p. 344, vol. i. new series.)

PAPER NO. IX.

Report of the Committee appointed by the Medical Society of the County of Saratoga, to investigate the Nature and Causes of the late Epidemic, &c. Published by order of the Society, and communicated to the Editors.

EXTRACT.

"THE whole number of cases which have occurred in this county we are unable to state, but from the best information we have been able to obtain, four thousand would be a moderate calculation; and those physicians taken collectively, who have not reported, must have lost at least one in eight.

"The bilious pneumonia became epidemic in some towns in this county early in December, 1812, in most others, in January, 1813. In one or two, however, agreeably to reports received, it did not appear earlier than the first of February. A number of sporadic cases appeared in different parts of the country in the latter part of Octo-

ber and in November; but it could not from its frequency, or its power of converting other diseases into itself, be properly styled epidemic in any place earlier than December.

"The first stage commences with a cold chill, which has sometimes lasted from four to twenty-four hours, or longer, but it generally continues from thirty minutes to two hours. This chill, which differs not essentially (except in the severity of the ague) from those which commonly precede pneumonia, is accompanied with coldness of the extremities.

"During the continuance of the chill, the patient is generally afflicted with a violent pain in the head, back, loins, and some part of the thorax. It sometimes at the first, extends to the limbs, resembling acute rheumatism; at other times to the bowels, resembling enteritis. The pain in most instances becomes fixed in some portion of the membranes of the lungs. The patient is racked with a cough, which is at first dry and suffocating, but soon becomes harsh and deep, raising a thin tenacious mucus; on the third or fourth day the matter expectorated becomes thicker, less tenacious, and frequently striped or mixed with blood. During the cold stage the pulse is weak, small, and in some instances, where the chill has continued long, imperceptible at the wrist. Nausea is a common symptom, and vomiting a frequent one; the bowels, on the first days of the fever, for the most part costive; the skin about the temperature common in peripneumonia; the face generally red and bloated, but in many cases pale and cadaverous.

"Second stage: when the fever did not terminate about the fifth or seventh day, by a favourable crisis, the following symptoms generally ensued; the pulse became full, soft, and weak, from ninety to one hundred and ten strokes in a minute; the tunica adnata of the eye and skin yellow, the tongue dry, and coated with a dark brown, except in a few cases, where it was smooth and glazed of a dark red; heat and dryness of the skin much more considerable than in the former stage; the bowels swollen and elastic. Uncommonly large quantities of dark bile were discharged by the operation of emetics and cathartics.

"From about the first of February till the first of April, many cases of the fever in different parts of the county, as appears by the reports before us, ran a quick and rapid

course, frequently passing through the first and second stage in a few hours, putting on the symptoms of typhus gravior, in its most malignant form, and often proving mortal in four or five days.

" If called before the cold chill is gone, we advise to shorten it as much as possible, which is in general easily effected by some gentle stimulant, internally given, and warmth externally applied. As soon as the fever rose, where the pulse would bear it, we bled moderately; which sometimes required repeating on the second day, very rarely on the third. The loss of twenty or thirty ounces of blood, generally removed the pneumonic symptoms as perfectly as sixty or seventy have done for several winters past. After the first bleeding, if the pain in the thorax was so far relieved as to render it safe, we administered a full dose of tartarized antimony and calomel, sufficient to cause a brisk operation as an emetic and cathartic; where this was thought dangerous, calomel *per se*, or combined with jalap or scammony. As soon as the operation was over, we applied warm fomentations of vinegar or spirits over the seat of local pain, and gave diaphoretics, which seldom failed to relieve the pain and produce a free perspiration, rendering the symptoms mild, and leaving little for the physicians to do, more than to continue the perspiration, and by the use of pectorals to cause a free expectoration. The diaphoretic most highly approved by a majority of those physicians who have reported, is a powder nearly similar to Dover's. As pectorals, digitalis and radix scillæ were very useful; vinum antimoniale and laudanum have also been highly recommended. Frequent and severe cathartics to cleanse the stomach and bowels are absolutely necessary in every stage of the disease. Happily we have it in our power to state, that physicians have generally agreed in the opinion, that uncommonly large doses of cathartics were necessary to produce an operation; that their frequent repetition was attended with happy effects; that external heat over the local pain was very serviceable; that epispastics after the inflammatory symptoms began to subside, applied immediately over the part affected, were very useful in removing the local pain; that calomel in small doses, where the congestion of the vessels of the lungs or liver was considerable, was attended

with its usual good effects; but that early in the disease, as it increased the stimulus without overcoming the morbid excitement, it was of little or no use, and in some cases injurious; that sweats from external heat in the forming state of the fever, were often useful in throwing it off, and preventing it from running a course; that after the fever was fully formed, they were generally pernicious; that they were never an indifferent remedy, always beneficial or injurious; that the latter was most frequently the case, as the fever advanced through its forming state too rapidly for their being used with safety.

"About the fifteenth or twentieth of January, many cases of the fever occurred where the pulse was so weak as to forbid the use of the lancet. This species of cases continued to increase till the close of the epidemic. Some physicians say one third, others one fourth of the whole were of this description. In other respects they required the same treatment as other cases. It further appears that in the months of February and March, there were in many parts of the county various cases, which ran rapidly through the inflammatory stage into one of a high state of malignancy, scarce inferior to the plague, attended with great muscular debility and chills, sometimes distressing ague, violent pain in the side, breast, head, or extremities, torpor on the surface, pulse sometimes small and hard, and often slow and irregular; the tongue in the first stage dry and white, in the last brown and dark; skin dry and hot, as in other malignant diseases; breathing difficult and laborious, and a hacking cough; expectorated matter sometimes viscid and glary, at others resembling blood and mucus agitated together. In these cases the patient would not bear the loss of any blood. Equal parts of tartarized antimony and calomel were found to throw off large quantities of dark fœtid bile. Friction with vinegar and Cayenne pepper, and the application of brandy and cantharides to the extremities till perspiration was produced, were found to be serviceable. About the second or third day, brandy, and the diffusable stimulants became necessary, followed by the rad. serp. virg. Seneka snake root, columbo, bark, quassia, &c.

"The Committee would further observe, that the epidemic is not a new disease. We have discovered no symptoms which are uncommon in those mixed fevers which

occur in the fall, spring, and winter, to which the system is predisposed by the absorption of marsh miasma, and of which that state of the atmosphere which produces pneumonic inflammation, and cold externally applied, are the exciting causes. It has not been essentially different from those peripneumonies which visited us fifteen or twenty years since, except that cases of malignancy have been more frequent, and as far as we have been able to learn, it has yielded to the same modes of treatment. The greater malignancy of the epidemic may, probably in part, be attributed to the openness of the early part of the winter, and to the freedom of the ground from frost, till nearly the middle of January.

" It appears from the reports before us that the fifth, seventh, and fourteenth days were often critical. The crisis sometimes fell on the third day, rarely on the ninth, and some cases ran beyond the fourteenth day, which last gradually wore off without any perceptible effect," &c.

Paper No. X.

History of the Mortal Epidemic that appeared in the Towns of Lyme and Waterford, Connecticut, 1813.

COMPENDIUM.

Dr. Vine Utley, of Lyme, Connecticut, has obligingly put us in possession of a considerable body of authentic observations on the nature and progress of the alarming epidemic which appeared in his neighbourhood in the year 1813. It extended in various directions near where Connecticut river enters Long-Island sound, and chiefly pervaded the towns of Lyme and Waterford. The height of its malignancy was the same as that which occurred in many other places during the last winter months and opening of the spring. It principally affected people of middle age, and in some instances it took off one out of eight or ten persons. Dr. Utley, with other experienced practitioners, assert, that in one class of patients the disease assumed the character of a genuine synocha, in the form of pneumonia, while other constitutions transformed it into a typhus fever, without any apparent affection of the

lungs, at least in the commencement. The following symptoms are respectively assigned to each species of disease: a sudden or gradual prostration of strength; paroxysms of chills, ushered in with more or less intensity, according to the first assistance which a patient might receive; but of itself this horripilatio would last from twenty-four to forty-eight hours, and be followed by a proportionate degree of heat and strong arterial action, with excessive thirst; then the respiration would be laborious, the face livid, the capillary vessels on the rete mucosum suffused; the eyes very lucid in some cases, and dull, heavy, or glazed in others. This stage was marked by a dry and importunate cough, which, if attended with expectoration, was streaked with blood. Dr. Utley says that the pulse was full, strong, and from 90 to 120 in a minute.

The thorax was mostly the seat of great pains in one side or the other, and on the sternum; but there were also erratic pains in the back, the loins, the neck, and the shoulders; sometimes absolutely fixed on the chest. The tongue, after the preternatural heat of the body, would successively be covered with a white and brown scurf. By the violence of these symptoms, others were consequently and variously created, such as ischuria or diarrhœa, attended with alvine bilious discharges, and a remarkable coldness of the feet. This last symptom is peculiarly connected with pneumonia. If carried off in this form of disease, patients generally died on the third, fifth, or sixth day; but few lived a quarter of lunation.

The asthenic form was ushered in with a sense of distress at the præcordia, or pit of the stomach; hence ascending the head, as a pain or dimness of sight; this returned down along the spine, attended sometimes with an universal paralysis; the prostration extreme, becoming torpid or comatose, lowering the pulse to 40 in a minute, when, in some instances, the jaws were set firm. If stimulants, internally or externally applied, could not meliorate the first attack, death must terminate it in twelve, twenty-four, or forty-eight hours; but otherwise the pulse was increasing from 90 to 130 pulsations, with a hacking cough, and expectoration of acrid and saline mucus, accompanied with pains in the side, shoulders, and large joints, and a great tightness of the chest.

We regret to be obliged to abridge and to pass over a variety of other symptoms in different subjects, during which "life and death were apparently perched on the same beam." On the whole, the Doctor observes, that the epidemic existed in various degrees of violence, from the mildness of a bad cold in some, and a mild typhus in others, to that of the most deadly plague.

The stimulating, heating, and sweating plan of cure, without bleeding, had appeared uniformly fatal. This circumstance proved at least, that in the sthenic form of the winter epidemic, it was necessary to draw blood after the first cold paroxysm, and many times afterwards, according to subsequent symptoms. The treatment by depletion was afterwards carried on by saline and mercurial remedies. Extreme arterial action was counteracted by antimonial doses. Effusions in the chest were restrained by epispastics, and a judicious exhibition of light food, and small doses of opium were administered in the last stage.

The treatment of the second form, or typhoid disease, required gradual doses of thebaïc tincture, in which Dr. Utley reposes great confidence as a stimulant. It was rendered so by being diluted in some aromatic infusion. In this cold, torpid, and comatose stage, many other stimulants were judiciously applied externally, and epispastics extended in proportion to paralytic affections, which were frequent in this form of the epidemic. In the succeeding stage, powerful evacuants were provided against bilious congestions. This indication has proved to be sufficient for the relief of the lungs, supposed to be affected secondarily. Calomel was principally depended on, and exhibited until it excited ptyalism. It is remarkable that in the last stage only, and when all internal functions were as far as possible relieved, and their organs prepared, the Doctor administered ipecacuanha as an emetic, and various tonics. In nine or ten days the cure was effected, whether another train of critical symptoms took place or not, such as diarrhœa, dysentery, &c. especially in children; but these were successfully subdued by calomel and alkaline salts.

As we are satisfied of the ingenuousness and candour of our correspondent, we have not the smallest doubt of the great success of his practice in this violent epidemic, when, out of one hundred and sixteen patients, he lost but

very few. Our contracted limits of space and time will not permit us further to exemplify his doctrines and practice by the interesting cases he adduces; but it is our duty to mention at least our perfect reliance on his claim to authority and judgment, supported by the testimonies offered by his friends and eminent practitioners, Drs. Thomas Miner and John R. Watrous.

Paper No. XI.

Communication to the Editor of the Richmond Argus, by Dr. Joseph Trent. *April* 17, 1814.

This instructive paper exhibits the prevalence of the same epidemic at a great distance from us, although on the same line of the Atlantic shores. We find also, that with very little difference, it put on the same forms, from a mild catarrhal affection, to that of a violent and malignant disorder.

EXTRACT.

" In the more violent attack, the breathing is oppressed and difficult from the commencement, but pain is frequently not felt in the breast, sides, or abdomen, until a lapse of twenty-four or thirty-six hours; by which time the headache abates, and then an acute pain is felt somewhere about the chest or abdomen, attended with stricture across the breast, and most difficult respiration. The cough is now frequent, with a spitting of white frothy mucus, which is often streaked with blood, and sometimes tinged with bile, but is hardly ever purulent or concocted as in true pleurisy.

" The sick are generally drowsy, and sleep more and better than could be calculated on. These symptoms go on increasing, when nothing is done in time, until the third or fourth day, when the pain leaves the patient, and his friends flatter themselves that he is recovering. The appetite returns, the countenance brightens up, and food relished when well, is now asked for.

" During this apparent truce, which lasts from twenty

to thirty hours, the cough becomes short and unproductive, a rattling is heard, and the breathing grows more and more difficult, until sudden suffocation blasts the fond hopes of the patient and his friends. The mind has been known to be correct, and the sick to converse but a few minutes before death. From a few examinations of the dead, effusions of coagulating lymph are found to have been made upon the surface of such organs as sustained the greatest force of the disease. The pain of the part is relieved by the vessels pouring out this lymph, which, when in quantity, is always mortal; but, if in a slight degree, may be removed by exciting the action of the absorbents by mercury.

"Persons living in marshy or sunken situations, and those of bilious temperaments living any where, have very violent bilious symptoms blended with the above. They vomit severely, and discharge very dark matter from the bowels, and complain of severe pain in the back and limbs, with great restlessness. Some are seized with stupor immediately after the chill, and remain so comatose for twenty or thirty hours, as not to be aroused, even by the most violent shakings, to answer the shortest question; and yet they seem to understand what is said to them, and begin to answer, but fall asleep before they finish. As soon as the stupor abates, they complain of acute pain in the sides, breast, or abdomen, and have all the usual catarrhal symptoms. Children are generally affected with great drowsiness, and are sometimes convulsed at the beginning."

The author has also observed a form of this epidemic similar to the influenza which raged in Paris in 1803, and was there called *la grippe*. He says that "the force of the disease was sometimes spent upon the fauces or throat, producing an inflammatory quinsy, which threatens and has occasioned suffocation in from fifteen to forty-eight hours from the attack. This form is also introduced by shiverings, head-ache, stuffing of the nose, hoarseness, and excretion of white frothy mucus from the throat, with very little cough, and a breathlessness. The patients rise up from bed declaring they must choak, complain of giddiness and faintness, and sometimes puke. The tumefaction of the throat is not great enough to account for these alarming suffocative feelings. The muscles of respiration, and

particularly of the glottis, must be spasmodically affected. One of these paroxysms could not be survived many minutes. Neither the breathing nor cough resemble croup. Very large glandular swellings sometimes occur about the throat."

It appears that the Doctor relied very much upon bleeding, guiding himself by the state of the pulse after tying the arm. He also administered calomel, tartar emetic, and opium; sudorifics, and large epispastics.

Paper No. XII.

Additional Remarks on the Winter Epidemic. By Dr. James Mann, *Hospital Surgeon United States Army, communicated to the Editors.*

EXTRACT.

"*Burlington, April* 6, 1814.

"The observations respecting the epidemic of the winter 1812 and 1813, you have been pleased to lay before the public. That disease was not considered by myself, in any instance, as typhoid, even where the pulse was small and extremities cold. These symptoms, with a suffocated respiration, were then believed to be the highest grade of inflammation. Such were the congestions in the lungs, that they were rendered incapable of absorbing through its membranes the vital air. To this cause, and this alone, is ascribed the weak action of the heart and arteries, and coldness of the extremities, also the sense of suffocation. This sense of suffocation was not accompanied in the first stage of the disease with an accumulation of matter in the bronchiæ. The pain was less severe than in cases with strong arterial action, while the respiration was more oppressed. It has been already observed, that there was not a remarkable diminution of muscular strength; that the patient frequently walked the room a few minutes before death. A great prostration of strength is considered as a typhoid state of disease. Bleeding has been considered by me among the principal remedies to cure this formidable *pneumonia.* The few cases of this disease which have

fallen under my observation the past winter, confirm me in the opinion already advanced upon the subject. If, in any instance, bleeding has not supported its reputation as a remedy in this disease, it is because too large quantities have been taken at one time. The most alarming forms of this *pneumonia*, such as above described, do not admit often of more than four, six, or eight ounces being taken at once. These quantities may be taken every two, three, or four hours, *pro re natâ*. So that in the course of twenty-four hours, the patient may advantageously lose as much as might safely be taken from a patient with strong arterial action at one or two bleedings. The reason is very obvious; the congestions can only be removed by lessening the volume of blood, which has become, for want of the vital principle (oxygene), incapable of stimulating the extremities of the arteries; hence the sensation of cold. In proportion as the congestions are removed from the lungs by the abstraction of a quantity of blood, however small, that viscus, so important to life, is rendered capable of absorbing more oxygene, the pulse becomes proportionably fuller, and the extremities warmer, while the pain in the chest is perhaps increased; a larger quantity of blood now may be safely taken than at first. After this manner the alarming symptoms of the disease may be overcome."

Paper No. XIII.

Remarks on the Winter Epidemic, as published in the Bardstown (Kentucky) Repository, and communicated to the Editors by J. Kercheval, *M. D.*

This paper claims our particular attention, because it adverts to, and decides a few important questions relative to the remote cause of the epidemic, and to the best mode of treatment which it requires. We will first present a description of the disease as it appeared in Kentucky.

Extract.

"We feel too sensibly restrained by our limits, to enter into a historical detail of this fell disease in all its modes

of torture; it would be a horrid picture of exquisite pangs and deep distress, whose sombre glooms, and sickening shades, would chill the soul, and wring the heart with anguish. Permit us to observe, however, its shuddering onset was the dreadful presage of the total abolition of powers that was quickly to ensue—to chills succeed fever, with more or less intensity; and invariably accompanied with excruciating pains in the chest, heavy and fatiguing respiration; a cough, more or less laborious, and lungs oppressed with phlegm, were constant attendants upon this state of the disease; while the head, participating in the sudden and accumulated excitement, discovered very generally a high degree of affection, in acute pains variously situated, and a derangement of the sensorium (in many cases) manifested by raving delirium, stupor, and privation of speech. Indeed it happens in a certain proportion of cases, that the head is the primary seat of the disease; the chest at the same time remaining free from any local disorder: local inflammation is often indicated by external swelling and redness of the face and eyes, and is of a favourable prognosis, as it indicates an exterior seat of the affection. This disease is seldom attended with adventitious incidents, but generally pursuing the same phenomena or routine of appearances, (without a remission of symptoms in its severest form) terminates its horrid career with the life of the victim, on the fourth or fifth day; or in some instances, when convulsions supervene, in the first or second day."

We might conclude, from this general statement, that while we witnessed great varieties of symptoms characteristic of the epidemic in these colder parts of the Union, the most severe and fatal form was more uniformly observed in the new-settled regions of the west.

" The accession of the disease as an epidemic, with its alarming fatality, (in popular apprehension) gave birth to the most wild and discordant views of its nature and origin. The mind, agitated by an incomprehensible source of alarm, seizes the grossest absurdities as facts, and embraces them as realities.

" Poisoning from *tea*, *coffee*, or the equally ridiculous idea of its having been received from *British garrisons*, had been industriously propagated, and believed by many;

while others, restraining their speculations more to a domestic source, alleged its cause to the blasted products of the preceding autumn, as it may be recollected that just as the husbandman, in his agreeable anticipations, thought he was about to grasp the full fruition of his labour in abundant corn, an 'untimely frost' foiled his hopes, and he was not able to reap as much grain as would give him agreeable sustenance.

"Indeed it would be endless, and by no means advantageous, to retrace all the extravagant and incoherent opinions that have gained currency on this fearful subject. But there is another class of opinions, as they emanate from men of experience and intelligence, that merits attention.

"Foremost in the ranks of those (west of the mountains) who have made a publication of their observations and deductions, stands the humane and philanthropic Dr. A. Hunn, whose essays upon the late epidemic have, as far as I have learnt, been read with interest and avidity; and whose motives none have more highly appreciated than myself.

"But, ere we sanction his doctrines in their widest import, it seems proper to devote a few moments to their investigation. That the disease in question should be justly ascribable to 'ill-matured viands,' or to a 'pestilential *miasm*,' (if this is understood to be the result of putrefaction) appears to us extremely problematical; because we have the most satisfactory information before us of the disease having made its appearance throughout the state of New-York, and the adjacent countries, in the winter 1813-14, when no failure of crops was heard of, and the temperature of the weather uniformly so far below the point at which putrefaction can commence, that all depravity of air from that source was wholly excluded.

"The Editors of the Medical Repository inform us, that the disease prevailed with unremitting violence during the winter, while the frost had penetrated two inches into the earth, and four upon 'fresh water surfaces;' again the disease only made its appearance with the accession of frost, and vanished upon a return of warm temperature. Now it appears rational to us, that a disease caused by gaseous fluids proceeding from corrupt sources, would, agreeably to physical laws, prevail only during such periods of atmospherical depravity.

" Bleeding, from the first instances of the disease until now, has ever been employed with the most satisfactory effects, under the following regulations; that is to say, a full or tense pulse, acute pain, and hot fever—every twenty-four hours at least, during the prevalence of these symptoms, a portion of blood has been recommended to be drawn. Such are only the general remedies that have given success to our efforts; and we lament very much that time does not permit us to detail the greater refinements in practice.

" The use of the lancet in the most acute distress, has almost instantaneously produced an alleviation of symptoms, and life in some instances appeared evidently to be the happy effect of a portion of blood being taken at the approach of the critical stage.

" A third description of gentlemen who have employed bleeding with apparent advantage in the disease, have become afterwards surprised at subsequent changes in the blood, and while the patient has recovered under its use, precipitately pronounce it deleterious in its consequences. It was the augmentation of coagulable matter in the blood after bleeding, that changed the opinion of Dr. Hunn as to the propriety of venesection. As these objections are levelled at the fundamental principles of our practice, as well as that hitherto inculcated by the Doctor himself, we must beg indulgence of our reader, as well for our own, as his satisfaction, to devote a short time to this part of the subject.

" That the lymphatic appearance of the blood increases with the progress of the disease, is a fact beyond denial. This will even happen where the violence of the case has been abated by successive bleedings, cathartics, &c. But that this increase of coagulable matter in the blood, following the use of these means, should augur a proportionable increase of inflammatory diathesis in the system, and a corresponding degree of danger and uncertainty in the prognosis, by which they are to be discarded as baneful and destructive, is a deduction totally unwarrantable from the established efficacy of the remedies.

" For whatever may be said against the use of the lancet, may, with equal propriety, be objected to purgatives. These, by their operation upon the visceral glands, effect, through a discharge of secreted humours, the same reduction of the

pulse and diminution of the fluids as bleeding; and there cannot be an inconsistency more palpable than in those who employ purgatives and other evacuating medicines (in violent cases), and renounce bleeding as hurtful and improper.

"Few cases exhibit large incrustations of lymph in the early or incipient stage of the malady, nor until the pains, oppression of the chest, and respiration, are mitigated by the ordinary means; upon which occurrence the pulse rises from depression, and the circulation of fluids becomes more free and active, and it is in this bounding state of pulse that the lymph is principally to be discovered."

REMARKS.

It has been not without much trouble, but with some gratification, that the Editors have thus been able to complete a collection of interesting documents on a very destructive epidemic. It had not the pestilential sway of the yellow fever, nor the hopeless and rapid fatality of the malignant spotted fever. It has been also in a great measure under the control of medical art; but it has been marked by long and repeated periods of duration in many towns and villages; it has pervaded, during two winters and springs, extensive tracts of the eastern and western states, and large populous districts.

The important question of its *remote cause*, remains yet unexplained, few of our correspondents having inquired into it. We find, however, in paper No. 1, *extracted* from Dr. Yates's publication, that the winter epidemic is assimilated to malignant bilious fevers of the fall; implying thereby, that putrid or marshy exhalations were the actual or previous cause of the disorder. We are aware that many respectable practitioners have favoured the same opinion, which would have been proclaimed by the great Sydenham himself, who traced all epidemics to terrestrial effluvia. We object however to that doctrine with the arguments of Dr. J. Kercheval, of Kentucky, (paper No. 13). In addition to which we beg leave to remark, as a matter of fact, that in the city of New-York, and other thickly inhabited towns, we have not been able to trace any progress of the epidemic in low, close, and confined places;

that, on the contrary, we have marked numerous victims who had been more particularly exposed to purifying ventilations, cold, bleak, and inclement weather. The supposition of a morbid cause pre-exisiting since the period of autumnal influence, would appear to us unphilosophical and unfounded; for the agency of impure or deleterious miasmata was never known to constitute latent diseases, and, according to natural laws, is always attended with immediate effects.

It is not in the power of man to account for every peculiar atmospheric constitution which generates an epidemical disease, no more than that which may blast the hopes of the industrious husbandman, or which unexpectedly repays his labours in tenfold proportion to his wants or calculations. If any apparent physical cause could be assigned, one might point out the cold or humid season during which the winter epidemic prevailed. But again, to overthrow that opinion, could it not be affirmed that similar periods of weather have elapsed without ever creating the same malady? And besides, what possible degree of temperature and floating moisture could be marked as productive of a similar disease, at the same time, throughout eight or ten different degrees of latitude?

In this perplexity and incertitude, must we give up the question as depending from some unknown combination of the constituent elements of the atmosphere? Is it the το θειον, or *quid divinum* of Hippocrates, an undefined ether, and the *blas* of Van Helmont, or influence from the planetary bodies? We believe not; and perhaps by recurring to the admirable doctrine of the Coan physician himself, we may find a clue to come at some defined cause. It is very well known that Hippocrates assigned to each season of the year, their respective influence on the four animal fluids. Hence the lymph accumulates during the winter, and the blood commences fermenting towards the spring. Alluding to some phenomena of vegetation, "you should know," said our great oracle, "at what season the humours predominate:" *Nosse oportet in quibus temporibus humores florent.* (Lib. de Humoribus.) It is not our task at present to explain in what physiological sense of the word certain pernicious effects may be received in the human constitution from winds and temperature; but one

circumstance we may affirm, that is, the frequent return of cold and humid north-east winds during the latter part of the preceding winters, while the first had been very moderate. "A succession of irregular seasons," says an eminent modern writer, "do constitute the material cause of epidemics. The inflammatory ones will be more active in the spring than in any other season. The sanguine temperaments will be more uniformly affected, and still more so, if the north and north-east winds prevail; the head and upper organs (lungs and heart) will become the seat of disease." (*Semeiotique de Broussonet*, p. 40.)

Who can say but that alteration in our seasons is a periodical one during the revolution of a lunar cycle, which is nineteen years? It is perhaps in consequence of a rotation of atmospheric constitutions too long to be recollected by individuals, that during another period of the lunar cycle, we have been exposed, in former years, to the continuation of south and south-west winds in summer and fall, and thereby, to prevailing bilious malignant fevers, fall fevers, and yellow fever. *Qualia sunt tempora, tales etiam erunt morbi et constitutiones ex ipsis.* (De Humor. § 1.)

These hints will abundantly prove that the same peculiarities of weather may repeatedly create the same epidemic disease, without the agency of terrestrial effluvia, which a cold temperature could not develope with any degree of deleterious influence.

We are aware of no difficulty in assigning the *proximate cause* of the peripneumonia notha to such pathological determinations as are to be inferred from anatomical inspection. This has uniformly exhibited inflammations of the lungs and pleura, of the heart and pericardium; both cavities were filled with effused purulent serum, and the investing membranes lined with differently coloured coagulated lymph. The substance of the lungs was in all instances more or less turgid, hardened, and had become parenchimatous, as that of the liver. From the testimonies of Drs. J. Mann, Hospital Surgeon, and Silas Fuller, Regimental Surgeon, and from numerous dissections in the New-York City and Military Hospitals, and in private practice, we are enabled to confirm the same. In almost all of them neither the liver, other biliary organs, the in-

testines, nor the brain, have shown the least sign of primary affection; under which impression we infer, that the *proximate cause* has in all instances conformably depended upon the nature of the *remote* and atmospheric agency which we have attempted to describe.

The next difficulty in our documents is, the contrary modes of treatment which in different places have proved successful. But this difficulty is removed by much the greater number of them establishing the fact of two forms, the sthenic and asthenic winter epidemic. The first has more universally prevailed during the last winter, and the second was more frequently observed in 1812 and 13. It is also ascertained that there was a mixed state of both species, which has made it necessary for many practitioners not to bleed, but, according to the golden rule, *pro re natâ*. With pleasure we notice here an ingenious expedient practised by Dr. Vine Utley, of Connecticut, whereby he could ascertain, in doubtful cases, whether bleeding was required or not. He measured the heat of the body by inserting the ball of Fahrenheit's thermometer in the mouth and under the tongue, and took, as a safe indication, any degree of heat above that of the standard of health. We think that this mode could hardly be exceptionable. It was also more correct than to judge by the presence of coagulum in the first drawn blood, by which many physicians are accustomed to be guided. With Dr. J. Kercheval, of Kentucky, we know that in the most inflammatory attacks, the first drawn blood shows little or no coagulum at all, until, in the progress of a more bounding and active pulse, the lymph accumulates in a greater quantity, and then more probably promises a critical resolution of the disease. We have witnessed the danger of relying upon bleeding in the asthenic form of the epidemic; we have even attempted altogether to dispense with it, and in a few instances our success was calculated to encourage a systematical rejection of the remedy. Yielding, nevertheless, to well ascertained facts, we conclude that many victims of the epidemic should not have been bled during the first paroxysm, commonly called the *cold stage*, which is very long in the peripneumonia notha; or that they lost too much blood at once, a practice always to be deprecated in any acute disease; or that after bleeding they have been

deprived of those alimentary stimuli, exciting and cordial remedies, which partizans of the antiphlogistic method too often exclude from their practice. In any of these distinct circumstances, the danger of bronchial effusion, which venesection would have certainly retarded or removed, has been suddenly renewed and hastened by direct supervening debility.

There is, in our documents, an unanimous consent for the evacuating process, to be effected by the most active articles of the materia medica, such as tartar emetic, calomel, jalap, aloes, and gamboge, which, by judicious and timely employment, may promote alvine discharges, and thereby avert the influx of blood into the thoracic cavities. Sudorifics are rarely necessary, if not improper; but all kinds of external and internal stimulants were called for in the asthenic form of the epidemic, and in the cold stage of the other: thereby circulation was invigorated, vitality more equally diffused, and the excitability of the viscera renewed, especially that of the nervous system, which so often exhibited a train of paralytic, spasmodic, and typhoid symptoms. It appears that in every stage opium in the form of thebaic tincture has admirably favoured this last indication; it has been universally employed with advantage, even in large doses. It has been justly remarked that this remedy has acquired greater merit in its stimulating properties.

In taking leave of this interesting subject, we renew our respectful thanks to our contributors and correspondents, assuring them of our readiness to profit by further information from them, which might correct our statements in relation to past or future occurrences of the winter epidemic.*

* In the act of closing this article we have received a number of communications, which, in point of fact and doctrine, we regret not to have been able to present to our readers. Their several authors are respectfully informed, that we contemplate illustrating the subject in some future number, the better to diffuse what we deem conducive to uniformity of opinion and practice, with additional and satisfactory authority.

An Essay on the Disease of SHEEP, *called the* ROT. *By* THOMAS D. MITCHELL, *M. D. Lazaretto-Physician of Phiadelphia.*

IT is a matter of deep regret that the diseases of domestic animals have not received that attention which their great importance demands. The opportunities daily presented to practitioners residing in the country, if properly improved, might go very far to mitigate, or even to exterminate many of the evils incident to sheep, horses, and the other animals subservient to the convenience of mankind. The neglect on this subject is the more remarkable, because it involves, in some degree, the health and happiness of man; so that one would suppose, even selfish motives would operate as an inducement to this study.

The remarks about to be made are designed chiefly to elicit something more important from those who are better calculated for the task.

I have been led to pay some attention to the diseases of sheep, and to other circumstances which concern this useful animal. My observations relate to the merino breed, on account of its superior claim on our regard.

The disease now to be spoken of is known by the name of *the Rot.* It is one of great fatality, carrying off large numbers in a short space of time. For the information of those who are unacquainted with the disease, I beg leave to quote the following remarks of Mr. Teissier:—"The progress of this disease is slow; by great attention it may be suspected or perceived at its very commencement. The symptoms are, a languor in the animal's appearance; all its movements are weak; it eats less than the others, and does not ruminate well. The eyes and mouth soon become discoloured and pale; there is a watery swelling under the nether jaw, which disappears in the morning. The latter is one of the most striking symptoms, and it almost always announces the approach of death. If the body be opened, the flesh appears livid, the intestines pale, water collected in the lower belly, in the chest and head, hydatids in the cavities; the liver is pale, and in a state of decomposition. This disease is therefore a true cachexy."

The author just quoted assigns many causes for the pro-

duction of this disease; but I am inclined to believe that he has erred in the nature both of cause and effect. On this account I think it proper to give, in a brief manner, the views which I have entertained, and still conceive to be correct, on this point. They may appear singular, but perhaps experience may decide in their favour.

My views are founded on the analogy which I think has always subsisted between the diseases of man and those of other animals. And it is rational to suppose, that beings so much like ourselves, should be liable to frailties, similar in their nature.

From all the symptoms which I have either seen or heard of, I am induced to believe that the *rot* is analogous to the effects of chronic obstruction in the human liver. These effects are principally effusions of water into the abdomen, and other cavities of the body, attended with a general decay of the powers of the system. These obstructions of the liver are very frequently the result of neglected intermitting fever, and are to be met with in very many country situations, more especially in low, marshy lands. The state of the case then is this: sheep, in common with the human species, are liable to be affected by all those causes which produce intermitting fever, which, if neglected, will eventuate in obstructions of the liver, followed by dropsical effusions. These observations seem to be confirmed by actual dissection; for we see that the bodies of sheep, after death, do contain large quantities of serous fluid, and that the liver is in a state of decomposition, arising from long continued obstruction.

I know it will be said that this disease has existed on high grounds, and in situations free from great moisture. But this is only an exception to a general rule, and does not by any means invalidate the rule itself. For no one will deny that low, marshy grounds are more apt to produce agues than lofty situations; the fact is even proverbial. But, notwithstanding all this, intermitting fever has prevailed, and will perhaps never cease to have some existence, so long as man exists, even on the dryest soils.

What, then, is the fair inference? Are we to decry low situations altogether, and substitute lofty, dry grounds? By no means. The case can be understood with little difficulty. We must attend to circumstances and to the vary-

ing state of things. If there be a season of the year when the low lands are greatly moistened by dews, and more predisposed to produce intermitting fever than at other seasons, reason teaches us that the uplands should then have the preference: not that the disease would thus be exterminated altogether, for it may exist any where; but there can be no doubt that it would be less prevalent. This alternate use of the high and low lands, so as to guard against the injurious effects of the latter, is, in my opinion, of the utmost importance, and should receive particular attention, as it strikes at the root of the evil, by eradicating its greatest cause.

According to the view I have taken, the incipient stage of the *rot* is analogous to the first symptoms of ague in the human species. That sheep at this period have their chilly fits, their paroxysms of fever, may not perhaps be confirmed by observation; but we are sure of the fact, from the very nature of the case. These symptoms, however, may affect several sheep in a large flock, without attracting the notice of the most attentive shepherd. Thus neglected, the disease progresses; its force is determined to the liver, as in the human species. Obstructions of this important viscus soon take place, and remain undiscovered by any sign, until disorganization of the viscera is evinced by the wasting energies of the whole system. No wonder, therefore, that the *rot* is considered as a disease almost incurable; for it is an enemy that lies in ambush, destroying, though unseen.

The most probable mode of practice in this case, is the constant use of cathartics, so as to rouse the liver from its torpidity, and to excite the action of the absorbents. This is the object that must be accomplished, or life cannot be preserved.

He will act the wiser part, however, who regards the primary cause of the evil in question. By attending to this he will advance his own interest; and if tenderness and sympathy have a place in his bosom, he will be anxious to exert himself to lessen the sufferings of a useful, innocent, and helpless animal.

Directions for the Inoculation of the SHEEP-POX *(le* CLAVEAU *or la* CLAVELEE.*) Communicated to the Editors of the Medical Repository by* M. BOURIAT, *D. M. Member of the Medical Society, and of the Medical Jury of Tours, in France.* 1812.

THIS is an eruptive disease, peculiar to the sheep kind. By its progress, stages, and by its pustules, it is very similar to the small-pox, which is known to affect the human race only. It is very contagious, and can be communicated by taking the virus or matter from pustules, and inserting it under the cuticle, however small the puncture through which it is introduced. It is more virulent than the small-pox; for it excites a morbid action in the short period of twenty-four hours, by changing the natural colour of the parts which have received it, even in the healthiest animals; in which it forms a large red florid mark. In those of a feeble or diseased constitution, the appearance is paler, and purplish. The puncture rapidly inflames, and takes the appearance of an anthrax, covered by a horn-like and deep scab, of a brown colour, which soon becomes a sordid ulcer. This may happen in the soundest sheep, if the puncturing lancet is introduced too deeply into the muscular fibres. In this case, which ought carefully to be avoided, a phlegmon is produced, with succeeding gangrene and sloughing.

If the operation be skilfully performed, and not much beyond the cuticle, it proves perfectly successful for the healthy sheep, however large the artificial pustule may be. It is seldom dangerous to delicate animals, but proves fatal to those which previously were diseased. Inasmuch as the sheep-pox is to the animal like the variola to the human species, a constitutional preventive against its baneful ravages, it is expedient, when the disease breaks out in one or a few of a flock, to inoculate all the others with whom the danger of communication has existed, and no delay for a better season is ever required.

Some who believe that the spring and the fall are the only proper periods for this kind of inoculation, could not be sufficiently guarded against contagion, except they preclude their healthy sheep from the pastures and places to

which the others resort, and even from the shepherd and dog that remain with the sick.

The pock from which matter is to be taken should be of a red colour, on the seventh or eighth day of the eruption. On opening it at the apex, no blood oozes out, and by a slight pressure a thick matter is obtained on the lancet, with which the inoculation is to be immediately performed, at the end of the left shoulder, and above the knee, so that the future pustule may not be exposed to any friction. On the second day the skin appears discoloured. On the fourth, the part is inflamed, the pustule rises and is painful, but the animal is not otherwise morbidly affected. On the sixth, the pock, or rather the tumor, is large, and of a florid red, pink, or purplish colour. It is remarkable that if the constitutional operation of the poison is totally limited to the punctured part, all the adjacent veins are visibly red and turgid; but if it be diffused, numerous rolling tubercles or glands are felt on the adjacent parts, and other pocks are formed on the body, sometimes like a confluent small-pox.

In this case the pock of insertion being itself the centre of action, is not only larger than the others, but it has a peculiar form; its apex is flattened like a vaccinal pustule, its circumference is hard and callous, and may take, during its suppuration, the aspect of a sanious or carcinomatous ulcer. When the eruption is general, the pocks are small; and if any tubercles form in the axillæ, they will not be numerous; tubercles are not therefore to be dreaded, and will disappear at the period of the suppuration and desquamation.

The fever sets in at the end of the sixth day, with all the characteristic symptoms of the disease, which are at their height on the seventh, and gradually diminish from the eighth to the tenth. But we must take notice of several other morbid effects which may eventually take place. These are emphysematous swellings of the abdominal integuments, the same of the legs, of the neck, and the face, the lippitude of the eyes; with red suffusion of the conjunctiva, flux from the nostrils; all of them in various degree, and according to the actual and previous state of health of the sheep.

From the seventh to the tenth day, a strong itching sen-

sation is felt on or about the pustules, which compels the sheep to seek for friction, so far as to scratch themselves even with their own teeth. After the tenth day the pustules are in a drying state, when a slight secondary fever ushers in, as a critical effort of nature to expel from the system the last particle of the virus. Now, if this has been received through the skin by inoculation, how much more easily the depuration is accomplished than when its action has been primarily seated in some of the viscera, from whence it is more difficult to be disengaged! This resolution being complete, the sheep is immediately convalescent, and for ever protected against that mortal disease. But where it is not, and the least virulent miasma remains, as is frequently the case in the natural sheep-pox, another train of evils is to be apprehended, which constitute a slow fever and emaciation, mostly the harbinger of death.

It has been well ascertained that the eruption becomes perfectly dry from the fifteenth to the eighteenth day, and sloughs off from the twenty-first to the twenty-fifth day. Thus in less than a month a flock can be protected against the ravages of natural sheep-pox, the results of which would be to last in a sheep-fold much longer than a whole season, to kill the best part of the flock, and leave the others in a languishing and very doubtful condition. There are two periods of fever in this disease: the first is that of the eruption, and the secondary attack on the tenth or eleventh day, during which it is proper to keep the sheep in a moderate and pure air. Fumigations also, on the plan of Mr. De Morveau, and the renewing of litters, would be necessary while the flock are taken out, as the effluvia from the disease sensibly contaminate the air. They should not be suffered to lay in the rays of the sun. They ought to exercise a little, and to graze in dry and elevated spots; more particularly avoiding rainy or moist weather.

The following remedies and diet are furthermore prescribed:

Pustules much inflamed should be washed with tepid water, and when in the worst state, with a slight solution of muriate of soda, or of acetite of lead. Lotions for bad ulcers and scabs are to be made with infusions of wormwood, chamomile, and rue, with half a drachm of alum,

a few ounces of vinegar for each pint, and then cover the ulcer with fine powdered rosin, mixed with a third of muriate of ammonia. In cases of confluent sheep-pox, give frequently red wine and honey, at the moderate dose of two or three table-spoons full. When the disease is benign no remedies are wanted; but the food should be of wheat straw mixed with clover. In summer it will be proper to stimulate the appetite with a small proportion of ash-tree leaves. Let their water be whitened with a little barley-meal, and three times a day soured with vinegar. Elder blossom or saffron teas are recommended to wash inflamed and weeping eyes; also the nostrils, which may be stopped up with matter or thick mucus, and this is easily effected by means of a small syringe. Many other wholesome rules and modes of practice should be provided against diarrhœa, and various morbid effects of the natural or artificial sheep-pox, which are to be devised according to exigencies of seasons and acknowledged predisposition of the animal. The necessity of procuring them from medical and veterinary gentlemen, is obvious to every one who can appreciate the healthy condition of animals, which so eminently contribute to the most indispensable wants and comforts of mankind.*

An Essay on DISEASED TONSILS; *in a Letter to Dr.* FELIX PASCALIS. *By* HORACE H. HAYDEN, *Esq. Surgeon Dentist of Baltimore.*

(Continued from p. 146.)

DR. Beddoes, in speaking of scrophulous habits, (of which diseased tonsils are generally considered an unequivocal symptom) says, " as they grow up, the swellings

* We must remind our readers that the above paper is but a more medically detailed illustration of the same subject, satisfactorily presented to the public in a modern work, entitled, *A complete Treatise on Merinos, by Mr. Teissier, Inspector of the Rambouillet Establishment.* The two writers perfectly coincide in the principal circumstances of the disease, but the directions of the inoculation, are important, and sanctioned by the authority of a learned and eminent physician.

of the glands are perceived about the neck, and a whole chain of tumours may be often traced to this part. Some of these tumours gather and break, and when one is healed, another near it gathers and breaks, and so on in succession. Pain in the *ear*, with *discharge* of *matter*, repeatedly occurs. The *eyes* are apt to inflame, and the clear part of the eye acquires white opake spots, which shift from place to place."*

It was observed by Dr. Rush, in his remarks on scarlatina anginosa, that "sometimes the subsiding of the swelling of the throat was followed by a swelling behind the ear."† The subsidence of the swelling in the throat, in this, as well as in many others, left the amygdal glands, without doubt, in an ulcerated state, and on which the appearance behind the ear greatly depended.

Mr. Munro, in speaking of the glands of the head and neck, observes, "the glands which accompany the lower part of the artery that runs upon the face, are sometimes swelled in consequence of absorption from the lips, and also from gum boils; and those which accompany the occipital artery are frequently enlarged in consequence of absorption of matter from wounds of the scalp; from which facts we are led to trace the source of the lymph even in the living body."‡

On this point, weeks might be spent in useless research, collecting the facts interspersed through various authors of known reputation and acknowledged merit, which tend uniformly to prove, that the absorption of morbid matter from deep seated abscesses, occasions hectic fevers, colliquative sweats, diarrhœa, marasmus, and death; and, that from the absorption of matter from more superficial sources, as ichorous corroding ulcers, painful fistulæ, obstinate and unyielding sores, or the consequent irritation from them; swellings of a suppurative kind are formed in the neighbouring parts, equally as malignant and of a like continuance. Nay, more; that of a schirrous or indurated gland, exciting in its neighbourhood a disagreeable erysipelatous or other herpetic affection.

* See Beddoes on Consumption, p. 184.
† See Medical Inquiries, vol. i. p. 139.
‡ See Munro's Surgery and Anatomy, vol. iii. p. 217.

Hence, we have every reason to believe, that the amygdal glands, in an ulcerated state, are capable of producing all those unpleasant symptoms or effects which have been heretofore, and in the present instance are described as attending them; and that, when filled with an *extremely* offensive congested matter, their influence must be more extensive, and, from their peculiar situation, the consequences more serious and alarming. The more so, inasmuch as its influence or operation is not confined simply to the producing tinea capitis, eruptive face and neck, inflamed eyes, and an obliteration of some of the important organs of hearing; but, while the patient, in seeming security, is fondly indulging in fancied scenes of future happiness, it extends its baleful influence to the organs of respiration, producing not only inflammation, but ulceration both in the trachea and larynx, which, without timely assistance, terminates in a fatal phthisis laryngea.

On this part of the subject, the observations which I shall offer may, by some, be considered as not only irrelevant, but totally inapplicable to any case, decidedly and completely characterized as a phthisis. And even to you, Sir, with whom every symptom and consequence of diseased tonsils is so well known, they may appear superfluous; but, being the result of reflections upon cases that appeared unequivocal, and, at the same time, connected with my remarks on these organs in a diseased state, I hope they will not be deemed unseasonable, since they are not advanced as infallible, and by no means without exceptions.

That the above disease is a consequence of ulcerated or diseased tonsils, I am fully convinced; that it extends to the trachea, producing likewise ulceration and death, I am equally inclined to believe; and that the pharynx and œsophagus participate, as you have observed, in the operations of the disease, is no less probable.

Of its wide-extended prevalence, in a greater or less degree; of not only the existence or prevalence of the disease, but the liability of every mortal living to its attack, and of its ultimate and fatal termination, without seasonable and efficient aid, no person who is disposed to bestow a little attention, will remain long in doubt.

In the several cases that I have witnessed, and in which

the characters of this disease were manifest, there appeared an obvious difference, both in the operation and progress of the disease. In two of three cases only, that I shall at present notice, its progress was very slow.

In 1810, a Miss B—— called on me for professional assistance; previous to which, although unacquainted with the lady, I was informed that she had laboured under an indisposition for eighteen months, and which was viewed by her friends with serious anxiety. Knowing the nature of their suspicions, my attention was immediately drawn to objects most likely to be connected with or influenced by the complaint that was apprehended, rather than to those which lay more immediately within my own province. I listened to her voice, and viewed her countenance with fixed attention. In the latter I could see no indication of an organic disease; on the contrary, it bespoke health and cheerfulness rather than otherwise; but the former was different. It betrayed evident signs of an unnatural action about the glottis; and, at the same time, her words were inarticulate, having the nasal sound in part, as with a person whose "palate is fallen." I then examined her mouth with a view of arranging a new set of teeth, which was the object of her visit. Her teeth were generally decayed and gone in the superior jaw; her gums turgid and flabby; tonsils ulcerated and denuded, with evident marks of inflammation extending quite to the pharynx, as in several cases already mentioned. By this time I felt satisfied that the nature of her complaint had been mistaken; but in order more fully to settle the question with myself, I asked her several questions relative to her complaint. Her answers uniformly tended to confirm me in my first opinion. The elevation and depression of the chest, and all the acts of respiration were without pain, and free, except an occasional slight cough, such as is occasioned by a trifling irritation in the trachea.

Subsequent to this I saw her but once, which was shortly after having accomplished the object that has been mentioned, during the remainder of her life; but had frequent opportunities of being informed of her health, which continued in a fluctuating state until a short time before her decease; but from the time I saw her, her voice gradually failed until within several weeks before her death; and

even before she was confined it was completely lost, and she was unable to utter a sound above a whisper.

The various symptoms that were manifested in her case, from the time I saw her until her death, which was eighteen months, and from her first attack three years, were strikingly interesting; but which it was impossible for me to become fully acquainted with, without betraying an inexcusable officiousness on my part; but such was the nature of those that I was apprized of, as left no doubt in my mind that the disease originated in the amygdal glands; that the inflammation extended to the glottis; and that ulcers were formed in the larynx, and which slowly extended down the trachea, extinguishing not only her voice, but even life itself.

In October, 1809, I was requested to attend Mrs. B——, who, as I was informed by her physician, had been for some time indisposed. I accordingly waited on her, and, on examining her mouth, I found her gums in a complete fungous state, her teeth covered with sordes, and going in the most rapid manner to decay. I examined her throat; found the tonsils swollen, ulcerated, and covered with sloughs; glands of the fauces and pharynx enlarged, with inflammation pervading every part of the throat, and at the same time an almost insupportable fœtor in her breath. The maxillary and cervical glands were much enlarged; the latter could be traced with ease in their whole course. Her voice, though more masculine than the last mentioned patient's, was attended with a slight but peculiar hollow or whistling hoarseness, as if part of the breath passed through the glottis without creating any sound; and her words accompanied with a similar inarticulate nasal sound with the last mentioned.

Here I experienced that disagreeable restraint already expressed in the beginning of the subject. I felt a delicacy in asking many questions, and more so in giving opinions; nevertheless, I did not hesitate to tell the doating mother that the seat of her daughter's complaint had been entirely overlooked, that her lungs were not affected, but, in all probability, as sound as ever they were.

Shortly after I had an opportunity of conversing with her physician, and with whom I was intimately acquainted. He informed me that suspicions were entertained that the

lady above mentioned laboured under a slight pulmonary affection; that in hopes to overcome all the symptoms in the earliest stage, she had been put under a mercurial course early in the spring before, but not with that kind of effect that was anticipated; but that on going into the country her complaint had subsided very much; and that on her return to the city it had manifested strong symptoms of its recurrence, by a hacking cough, and a peculiar sensation about the larynx and trachea: that his intention was, shortly to commence with the mercury again. It was done, with no better success than the first time. I waited on her again in the spring of 1810, by particular request, for the purpose of examining her mouth. No appearances for the better were manifested. Her teeth were crumbling to pieces, and in a state similar to bones that have been subjected to the operation of caustic ley, as in the common process of making soap. Her voice was evidently worse; at the same time she appeared strong and resolute in her attentions to her domestic concerns. To describe the symptoms of her case in detail, would swell this communication, which already exceeds the limits prescribed at the commencement; I shall therefore only add, that she again went to the country, and returned towards autumn much benefited, except in her voice, which gradually failed her. She was shortly after suddenly taken ill, and her disease very soon assumed an aspect that defied all control, and she died in a state nearly similar to the case before related. A short time however before her death, a physician of a neighbouring county was requested to give his opinion of her case; which, I believe, had been considered a little complex, or otherwise somewhat obscure. He gave it as his opinion, as I was afterwards informed by the mother, that the lady's complaint was not properly a phthisis pulmonalis, but a *scrophulous consumption*. Whether that was correct or not I leave to your decision.

Here I must offer one or two remarks. It may be said that mercury may have occasioned the degree of fœtor in the breath of the above patient. In reply I will observe, that the taint in the breath occasioned by mercury is peculiar in itself, and is well known, and can be distinguished by every physician who has inhaled it once; but the smell occasioned by ulcers in the trachea or lungs, when in an

advanced stage, and the smell emitted from the tonsils when containing congested matter, is highly putrid.

It may be said also, that the rapid decay of her teeth was occasioned by the operation of the mercury. To this I shall reply, that the above lady's teeth were in a quick progressive state of decay, before any mercury was taken into the system. The operation of mercury on the teeth particularly, as well as the other bones of the body, is peculiarly interesting; but which I have not room to dilate upon here, further than to remark, that a long or short course of mercury does not occasion decay in the teeth, except in a direct manner; that is, by obliterating the vessels of the tooth, by which they are rendered inorganic; consequently receive no further nourishment. On this point I have instituted inquiries, the result of which authorize me to speak with confidence on the effect of mercury upon the human teeth.

In the following case the symptoms of this complaint were more strongly portrayed than any one I have as yet seen; and in which, I wish to be a little more explicit.

In the spring of 1810, I waited on Miss ——, for the purpose of preparing her mouth for the reception of a new set of teeth. On examining her mouth, I found it in a state similar to the one last mentioned, except that the gums did not present that turgidness which was then represented, and, at the same time, scarce a tooth in her mouth was exempt from decay, and a number entirely gone. This lady I had before waited on, some three or four years past, in the same capacity, at her family residence in a neighbouring town. She remarked to me, that the state of her health was very different from what it was when I last saw her; which was very evident; that during the winter past she had suffered from a severe indisposition, and from which she had by no means recovered; and that the nature of her business (which has been mentioned) seemed by no means to justify her in undertaking the journey. Although I had already observed some circumstances, when in conversation, which indicated derangement in the animal economy, yet I felt a desire to know the nature of her complaint; accordingly I asked her some questions to that effect. She informed me, that the first disagreeable sensation which she experienced was about the upper part of the throat, and

this for many months. It continued however to grow worse, and she had an attack of spitting of purulent matter, mixed with blood, and accompanied with a cough; that her physician had, at the early stage of the complaint, recommended a course of mercury as the most efficient remedy; that she had acquiesced in that treatment, without experiencing that relief which she had flattered herself with, and which she was taught to expect; that her reliance was now on the effect of warm weather and travelling, from which she had derived great benefit the preceding summer.

The first part of her answer, together with some circumstances that I have just hinted at, placed the matter beyond a doubt in my mind that her complaint had originated in the amygdal glands. Her appearance at first indicated weakness, occasioned more from confinement or abstinence than any serious illness; but that which more particularly attracted my notice, was a peculiar inarticulate sound in her words, which I have already mentioned, together with slight hoarseness; and, moreover, frequent efforts to swallow, in which not only all the muscles about the throat seemed to be brought into action, drawing the skin of the throat upwards, and the muscles of the mouth also drawing the angles of the mouth backwards and downwards, but a kind of involuntary, though slight, shrugging up of the shoulders, as with a person who has a sore throat. I then asked leave to examine her throat, the state of which it is unnecessary to describe, and that of the tonsils, as it was similar to that in the last case, except that there did not appear so great a degree of inflammation or turgidness in the parts. I asked her if her throat was sore? She answered, not at all. Why do you make those peculiar motions of the mouth, throat, and shoulders in swallowing? She answered, that she was under perpetual apprehensions of choaking in the act of swallowing.

My interrogations relative to her complaint, from its commencement, became more general; and so nearly did they correspond with the different symptoms and sensations she had experienced, that she assured me, that she could not have described them with more precision.

I endeavoured then to describe some of the consequences that result in some cases from diseased tonsils, avoiding however its termination in a consumption; among others

the expectoration of matter streaked with blood, and all this often without any visible signs of fever. She immediately observed that, during the height of her illness, her physician frequently expressed his astonishment, on examining her pulse, to find *no fever*. Her countenance, which at first seemed mantled with a melancholy dejection, now began to assume a gleam of cheerfulness; as if animated with the pleasing hope of a speedy relief from her afflicting complaint; and she began to enumerate other symptoms which she had and still experienced at times, independent of those in her throat, which she said were difficult to describe. Among others, that when she laid her head upon the pillow to rest, something rose in her throat, and she was obliged suddenly to rise up for fear of strangling; that in this way she spent many sleepless nights; and to avoid which she had recourse to a recumbent posture; and, further, that almost as soon as she lay down she was seized with a burning sensation all over her face and hands, some way up her arms, and which was so uncomfortable as to oblige her to resort to the use of a fan in even the coldest nights, and to swing her hands in the air while in bed to render herself comfortable; that at times the back of her head was as cold as if ice was applied to it; at others the whole skin of her head was excessively sore, which induced her to impute it to the weight of her hair, which was thick and very long; and several other symptoms, which possibly may not have had any connection with the complaint of her throat; but which, together with those I have mentioned, were sufficient to render her situation miserable indeed.

I have been thus particular in this case to point out the various symptoms that attended a case the most striking of an ulcerated trachea, proceeding from diseased amygdalæ, as appeared to me, that I have ever seen.

Those three cases which I have thus described to you, may not correspond exactly with your ideas of phthisis laryngis, though the first and second, in their last stage, which I did not see, may have terminated strictly as such.

Were I now to advance any opinions of my own with a view to ascertain with certainty the prevalence of a disease of this kind, as arising from the causes before stated, and with a view to engage the attention of some of the faculty in a subject of such vital importance, they would not per-

haps have all the weight they deserve. I shall therefore endeavour to substantiate the fact, by having recourse to authors of known celebrity, and whose opinions not only authorize such a belief, but even place it beyond the point of controversy. For this purpose I shall not go into an elaborate research, but confine myself to as few as the nature of the subject will permit.

Independent of what has already come from your own pen on this subject, which I know has been doubted by some, it has been proved by numerous dissections, that frequent cases of phthisis terminate fatally, where there was no mark of ulceration of the lungs, and particularly by that celebrated anatomist Mr. Camper. But a case very much in point is related by Dr. Black, Physician to the New-York Hospital. (See Med. Rep. Hex. 3, vol. i. p. 114.) He there observes (in the case of John Martin) that "on cutting into them (the lungs) no traces of organic lesion could be discovered." And at page 117 he observes further, "and we are right in concluding that there never had been any." In neither of these cases that I know of is there any mention made of ulceration in the trachea, particularly in the last, which, for several reasons, I consider an interesting one indeed.

From the character of this man's disease, or rather from the history of it, Dr. B. has drawn the following conclusions: "I am confirmed in an opinion which I some time since formed, that *phthisis pulmonalis* was *not* always attended with *tubercles* and *ulcers*, and consequently fatal from this cause;" yet we are told that the case was attended with "all the symptoms of pulmonary consumption"—"his cough was distressing," and "purulent expectoration." (Ibid.) From whence comes all the purulent matter in this case? Is it not probable that a further examination would have presented an ulcerated trachea? At least, I am inclined to think so, and the following cases warrant a full belief, not only of the probability, but of the reality of the thing.

It is remarked by Dr. Rush, that "sometimes the whole force of the fever falls upon the *trachea* instead of the lungs, producing in it defluctions, a hawking of blood, and occasionally a considerable *discharge of blood;* which are often followed by *ulcers* and a *spitting of pus.*"* This

* See Medical Inquiries, vol. ii. p. 84.

was almost the exact state of the patient last described (Miss ——) during the height of her illness; and although in this instance, it *may* have arisen from "general debility," yet, certain it is, agreeably to her own statement, that the first symptoms of her complaint were sensibly felt in and about her throat.

This grade of consumption was so decided in its character, as belonging to, or prevailing only in the trachea, that Dr. Rush observes, "I have called it a *tracheal* instead of a pulmonary consumption."*

Dr. Spence, of Dumfries, Virginia, calls it, more properly perhaps, a phthisis trachealis.

On this interesting subject Dr. Rush further remarks, "I have met with two cases of death from this disease, in which there were tubercles in the trachea. The patient breathed with *great difficulty*, and spoke *only* in a *whisper*." [Is there not a *striking* similarity in this and the first of the last three mentioned cases?] "One of them died from suffocation. In the other the tubercle bursted a few days before her death, and discharged a large quantity of fœtid matter."†

It will doubtless be a subject of wonder with some, why I am so particular in relating cases of this kind that have fallen under my observation, when Dr. Rush and many others have long ago described the same disease, with at least a number of its symptoms. It seems needless to reply, that it must appear obvious to one who examines with attention, that I have been endeavouring to prove that a tuberculous or ulcerated trachea, which generally terminates fatally, is a consequence of ulcerated, or otherwise diseased amygdal glands, rather than of a state of "general debility," which is supposed by many authors to be frequently the cause of local disease; and particularly Dr. Rush, who further observes, "should it be asked, why does general debility terminate by a disease in the lungs and trachea, *rather* than in *any other part* of the *body?* I answer, that it *seems* to be a *law* of the *system*, that general debility *should always* produce *some local disease*."‡

Did this great and good man ever write a sentence which rendered him more liable to animadversion? or did he ever give a more indefinite answer to any question?

* See Medical Inquiries, vol. ii. p. 84.
† See Medical Inquiries, vol. ii. p. 85. ‡ Ibid.

It would ill become me perhaps to offer any comments upon the above remark, or even to question the most unimportant opinion that he has ever advanced; but may I be permitted to ask, if there is a known law of the human system that confines any specific disease of an inflammatory grade to a particular part of the system; or, if it arises from "general debility," or is of the ulcerative kind, is there any definable law that limits its operations to the lungs and trachea, "*rather* than in any other part of the body?" If there is strictly such, does the answer that is given explain it; or is it calculated in any degree to obviate doubts which may be entertained on that subject?

Whatever may be the effect of general debility in producing disease in the lungs, it is not for me in the present case to say; but I am inclined to believe that tubercles or ulcers seldom exist or prevail in the larynx or trachea, except from syphilis, which did not originate, or was occasioned in the first instance by inflammation in the throat, and consequent ulceration of the amygdal glands, which remain long in that state, spreading disease to the neighbouring parts, and in which the larynx often participates, the result of which is a fatal ulceration of those parts.

Of this state of the larynx we have ample proof in the remarks of Dr. Baillie, who observes, "sometimes, however, an inflammation shall take place, which is confined to the cavity of the larynx, and it shall occasionally advance to suppuration. Of this I have known several instances." —"Suppuration is most apt to take place in the sacculi laryngis; and the ulcers which I have seen there, were sometimes attended with a scrophulous thickening of the surrounding parts."*

It may become a question with some, why this disease of the tonsils is so prevalent, and why so little noticed, since its consequences are often so serious? To the latter I shall reply, that this affection is, contrary to the general opinion, a consequence of some cold, or catarrhal affection, which is attended with inflammation and soreness of the throat.† This, whether mild or obstinate, often re-

* See Baillie's Morbid Dissections, p. 61 and 62.

† At the different stages or progress of diseased tonsils, I have found it very useful to wash and inject them, especially when ulcerated, with a weak solution of sulphate of zinc or vinegar, by means of a tight syringe of about two-thirds of an inch in diameter and four

ceives little or no attention at all; and if there is, by the most skilful too, on the subsidence of the inflammation or soreness, those glands are left in a diseased state; and, strange as it may appear, without causing the least pain or uneasiness in the act of deglutition, although they often appear so swollen or enlarged that there is scarce room for a morsel of food to pass between them.

From their peculiar formation and economy, they become gradually the repository of a considerable quantity of matter, that becomes horridly offensive. Whether it is the coagulable lymph secreted by the gland itself, I shall not pretend to say; but "this cheesy substance in process of time becomes stimulating, produces inflammation, &c. in the surrounding parts;"* and all this likewise without any soreness. If the patient is otherwise ill, and the physician is called in, the tongue is examined; but, as no complaint of the throat is made by the patient, no attention is paid to it. Thus they remain for months and years the seat of pestilence, while one or more of its neighbouring parts are subject to the influence of its morbid operations; which, if directed towards the larynx or trachea, it may be quick and fatal in its termination; or if slow, it is ultimately sure in a like result, if not seasonably checked.

Having thus far considered some of the probable consequences of a diseased state of the amygdal glands, I must solicit your indulgence in a few remarks on the character of the disease to which they are so liable; and also, on its general prevalence, particularly in this and other parts of America.

(To be continued.)

inches long, bearing a thin metallic pipe, curved at its end. By it the contained fluid can easily be directed with one hand, while the other keeps the mouth opened and the tongue depressed. In doing this, I have always observed that the fluid returned and received into a bason, is mixed with frothy mucus, blood and matter. This however is not to be seen, unless the ulceration has made some progress. At any time, the mucous membrane covering the glands of the fauces is inflamed, and the blood comes out unmixed, and in the form of thread or of small detached vessels. This proves that a kind of erysipelatous inflammation has destroyed the above membrane, as the cuticle would be by an erithema on the surface of the body; and the turgid blood-vessels, having little or no adherence at all, can easily be removed and washed off by the injected fluid. At this or succeeding periods, young persons are seldom sensible of any soreness. *F. P.*

* See Beddoes on Consumption, p. 75.

REVIEW.

American Ornithology; or, the Natural History of the Birds of the United States. Illustrated with Plates, engraved and coloured from original Drawings taken from Nature. By ALEXANDER WILSON. 4to. pp. 146. Vols. vii. and viii. *Philadelphia.* Bradford & Inskeep.

WILSON has been called away from his earthly labours. He appears no more on the theatre of human action. The admirers of nature vainly look for him in his accustomed haunts. They who were delighted with his poetry and song receive not any new compositions. The birds whom he hunted for the purpose of delineation and description, are now freed from his pursuit. It has pleased his great Master, in the midst of his zoological career, to summon him away. Though it would by no means be proper for us to indulge a querulous temper on this occasion, we can hardly forbear to inquire, wherefore it became necessary at this time to remove him? A moderate extension of his life would have enabled him to finish his ornithological work. Yet this was not permitted; owing, as far as our weakness and blindness may be allowed to conjecture, to the higher capacity in which he has been commissioned to act.

We remember him when, after maturing the plan of his publication, he personally went from place to place and from person to person, to explain his prospectus and solicit subscriptions. Having secured, by his perseverance, zeal, and address, a patronage sufficient to warrant the undertaking, we have witnessed the union of industry and talent with which he promoted it. For the fulfilment of the object we often contemplated his uncommon qualifications, such as a mind enthusiastically devoted to catch the habits and manners of the feathered race; a body vigorous and active to seek them in every recess between Canada and Florida; and organs of sense so quick and ready as to enable him to find them wheresoever they could be seen or

heard. He could, besides, bring them into possession by his gun; he could delineate their forms and colours with his pencil; and describe their characters with his pen.

It is needless for us to repeat with what satisfaction we have reviewed and welcomed each publication as it came forth. The appearance of the first volume in 1808, was welcomed by us in Med. Rep. vol. xii. p. 81 and 155. The second, which made its appearance in 1810, and the third in 1811, were respectfully reviewed in vol. xiv. p. 47 and 379. The fourth, which was published in 1812, was in like manner reviewed in vol. xv. p. 362. Faithful to our purpose, we noticed the fifth and sixth volumes in vol. xvi. or the first of the new series, p. 169 and 286.

We had entertained an expectation that Mr. Wilson's life would have been continued long enough to complete his grand design. His age, his constitution, his temperance, and his exercises, all concurred to favour such a belief. But *the race is not to the swift, nor the battle to the strong;* for in the midst of his course he has been arrested; and in the middle of his exertions has his vigour failed.

He has gone to the region frequented by the innocent and the good; and he has left behind him a monument more splendid and durable than legislatures could decree or architects construct.

We are informed that the descriptions of the birds, to the eighth volume inclusive, were finished and printed under the author's eye; and that so far, every plate, save one, was engraved under his superintendance. Such being the forwardness of the work, in both its historical and graphic departments, the death of Mr. W. untimely as it was, has not left the scientific world so destitute as many persons had in the first instance been induced to apprehend.

The upland birds of the United States are contained, as our readers well remember, in the six volumes already examined. The seventh and eighth, the two now before us, contain the waders and the web-footed water-fowl. Of the pains he took in collecting and arranging the materials, few persons have any adequate idea. But the following extracts from his letters on the subject, will convey some expression of his sentiments. On the second day of

April, 1811, he wrote to one of his friends these words:— "Placed as it were alone in this pursuit, the solitary and almost unassisted actor in this bird-business; obliged to traverse personally almost every region of the United States, in search of facts and subjects; to perform the parts of hunter, historian, painter, subscriber-seeker, and director of the various parts of the publication; your communication met me most agreeably, awakening such sensations as one would naturally feel on meeting an expected friend in the midst of a vast and solitary forest. Through this unexplored ornithological wilderness I will zealously endeavour to make my way, in despite of obstacles; beat up every bush, and penetrate every recess, and make a regular semi-annual report of my success." And in another of December 4th, 1811, to the same gentleman, he wrote thus:— "As it is in contemplation to dispose of the few remaining copies in Europe, I am anxious that such of our universities, public libraries, and private persons of taste who might wish to possess the work, were aware of this circumstance, as I never will again encounter the difficulties of a second edition; and the present will very soon be disposed of. That you may have a conception of *some* of these difficulties and sufferings, I do assure you, that although I have traversed more than twenty thousand miles in search of subjects for this work; have spent my little all in those excursions; have written five volumes, and am engaged in the sixth; and have superintended *personally* every thing relative to this publication, from the collecting of subscribers to its delivery, I have never yet shared one cent arising from it, and am at this moment literally friendless and moneyless."

We applaud in the highest terms the spirit that could encounter and surmount such a host of obstacles. The reward of all those who labour in the fields of literature and science, consists, if they are duly compensated, partly of money, and partly of reputation. To receive the whole consideration in the former, would lower the meed of exalted genius to the level of ordinary labour. And to take the compensation entirely in the latter, would only befit the condition of the few who already possess ample fortunes. The most desirable situation of the man who toils, is to receive moderate wages, with the encomium at the

end of the job, of having exerted himself nobly, and of being cited as an example worthy of imitation by all his successors. Experience however proves, that the greatet number fall short of this reasonable expectation, and while they make efforts for future and perhaps posthumous renown, are obliged literally to do present work for nothing, and procure meat, fire, and clothes from some other source. They have nevertheless their satisfaction, consisting of the delight resulting from their selected employment, and from the anticipation of a widely extended and imperishable fame.

This second grand division of the subject comprehends the order of birds, commonly denominated *grallæ*, or *waders*. They dwell on the confines of land and water; inhabiting the fens and marshes; frequenting ponds and inlets; and sustaining themselves on the food they collect in bays and recesses. Their toes are separated like those of land birds, nearly to their origin; and they seldom venture beyond their depth. Yet they have legs of extraordinary length, enabling them to walk on the firm bottom, in places where the *web-footed birds*, or *anseres*, are obliged to swim.

The species described and figured in the seventh volume are thirty-eight, viz. American avoset, ash-coloured sand-piper, Bartram's sand-piper, black-bellied plover, sheerwater, blue crane, clapper-rail, Esquimaux curlew, golden plover, great marbled godwit, great tern, great white heron, green heron, kildeer plover, lesser heron, long-legged avoset, qua-bird, red-backed and red-breasted sand-pipers, red-breasted snipe, ring plover, ring-tailed eagle, roseate spoon-bill, ruddy plover, sea eagle, semipalmated sand-piper, semipalmated snipe, short-tailed tern, snowy heron, solitary sand-piper, spotted sand-piper, stormy peterel, tell-tale godwit, the purre, turn-stone, Virginian rail, and yellow-shanks snipe. They make a large family of *strand-birds*. The eagles are evidently misplaced in this arrangement; but the author probably put them here, rather than omit them longer, or not insert them at all.

It is to be regretted that this indefatigable observer had not been induced to visit Long-Island, that grand resort of the feathered race. Its productive shores, particularly on the south side, adjoining the Atlantic ocean, swarm with

birds. The waders and the web-footed water-fowls, seem to be at home in Queen's and Suffolk counties. Their numbers and sorts have hitherto escaped correct reckoning. Nobody knows their proper names and histories. The presence of a Wilson was requisite to make a catalogue of the migrating, erratic, and resident species, to be the biographer of their humble tribes, and to assign to each its place in zoological system. We find, however, on examining the pages and plates, that a large proportion of them have been found on the coasts of New-Jersey, which in physical formation and geographical character bear a striking resemblance to the maritime borders of Jamaica, Hempstead, Oyster-bay, Huntington, Islip, and Brookhaven. Still there appear to be some omissions. A remakable one is the *dove-coloured rail*, a delicious bird, occasionally brought to the New-York market, and of which a pair from Long-Island may be seen finely preserved in Mr. Scudder's Museum. The account of it, as contained in Dr. Mitchill's letter to C. W. Peale, Esq. is hereunto annexed.

"*New-York, Nov.* 7, 1813.

"MY DEAR SIR,

"I condole with you and every lover of natural history, on the death of the ingenious and indefatigable Wilson. He is a great loss to us. I fear we shall not soon find so many capital qualities united in one ornithologist as he possessed. Had he been yet alive, I should have addressed to him the substance of this communication, that he might have improved upon it in his own admirable way.

"You recollect that he has given a fine figure and instructive description of the Rail or Sora, a noted bird of the United States. The drawing and history of that fowl add materially to the value of his sixth volume. I am enabled to add another species to that which he has delineated there, and to the two others contained in the seventh.

"On the 2d November, 1813, I bought the bird to which I refer, in this city. On the 5th I purchased several more. They were fresh and in good condition. They had been brought from New-Jersey, in the marshes of whose eastern shore they had been killed by the gunners.

Several sharp frosts had occurred before they were shot; showing that they are not in a hurry to migrate to the southward.

"The flesh, when broiled, was of a most palatable quality; and equal in flavour, if my taste may be trusted, either to woodcock or plover.

"From the extremity of the bill to the tail, this bird measured thirteen inches. The space between the expanded wings was twenty-five inches, from tip to tip. The legs were eight inches from the hip-joint to the middle toe. The body slender, flattish, and narrow.

"The beak light brown, with a resemblance to the semi-transparency of horn. Nostrils oblong. Tongue somewhat hard, or cartilaginous toward the point.

"The feathers leaden, or dark dove-colour on the head, neck, back, and rump; and of a pale or ashen colour on the lower side of the neck, and along the breast, belly, and vent. The outer margins of the wings, edges of the secondaries, and the under side of the tail feathers, white.

"Thighs covered about two-thirds down. The remainder bare. This part, together with the leg and foot, dusky green. Feet have four toes, three forward, and one smaller behind: the three foremost furnished with a separate articulated webbing, of the neatest form.

"Some greyish appearances about the neck and throat. Though the shape and zoological character make this creature unquestionably a rail; yet the greater size, the later departure, the half clear bill, the ciliated toes, and the leaden and ashen plumage, all distinguish him fully from the sora, clapper, and Virginian rail.

"As this dainty bird is very little known here, I hope you will afford us such information as you possess, that myself and friends may make a more satisfactory progress in becoming acquainted with the stranger. I have the pleasure to assure you of the instruction I have often received from visiting your grand collection, and of the high esteem and regard with which I remain yours,

"SAMUEL L. MITCHILL."

The eighth volume contains the histories and likenesses of the following birds, to wit: the American bittern and widgeon, surf-duck, blue and green-winged teal, brant,

wild-goose, buffle-headed duck, canvass-back, red-head, dusky duck, eider duck, gadwall, golden-eye, goosander, great heron, harlequin duck, hooded merganser, least bittern, long-billed curlew, long-tailed duck, Louisiana heron, mallard, marsh tern, pied duck, pied oyster-catcher, pintail duck, red-breasted merganser, red flamingo, ruddy duck, scarlet ibis, scaup-duck, scater duck, shoveller, smew, snow goose, sooty tern, summer duck, tufted duck, velvet duck, white ibis, whooping crane, wood ibis, and yellow-crowned heron, amounting to forty-four species, and to fifty different figures.

Various interesting matters are discussed in this volume. The author contends that the American long-billed curlew is a species quite different from the European, and peculiar to the western hemisphere (p. 23). His black, or surf-duck (anas perspicillata), though heretofore described, is peculiar to America (p. 49), and called in New-York the *coot*. The domestication of the wild goose is confidently stated in p. 57. The difference between the blue-winged teal, and the green-winged teal, is particularized at p. 74—101. The three gay-feathered birds, the shoveller, the mallard, and the wood-duck, are beautifully displayed, plate 67—70. The dispute, whether the *canvass-back* is different from the red-head, is settled affirmatively, and the discriminating marks noted at large, in p. 103—110. The *eider-duck*, is the bird called the *shoal-island* duck, from the fact of her frequenting the island of Shoals, on the coast of Maine. The history is interesting (p. 122). Mr. Scudder has fine specimens in his collection.

We add, by way of conclusion, the following facts concerning the Seètog, or canvass-back, on the south side of Long-Island.

This bird was long ago known to the gunners of Hempstead, who shoot wild fowl for the New-York market. They considered it a variety of the red-headed duck; and yet they were so fully convinced of the difference between them, that they called the canvass-back duck by the name of *Seètog*, or the *Seètock duck*.

Seètog is the name of a stream that enters the south-bay, between Moriches and Quag, in the county of Suffolk. It is a kind of fresh creek or river, which joins the salt-water at the before-mentioned place; and has, for a great

length of time, been noted for the numbers of these ducks which frequented it. They were, however, sold indiscriminately with the other web-footed birds. They brought about the same price that the broad-billed and black ducks fetched. The sessions of congress have aided in ascertaining its character. For in 1789 and 1790, when the meetings were held in New-York, the southern gentlemen used to send to Havre de Grace for them; and the birds were forwarded by the stages, accurately packed in boxes. Since the removal of the National Legislature to Washington, many gentlemen from New-York have seen them in their places of resort in the Susquehanna and the Potomac. They have examined them in the water, at market, and on the table. They have viewed them too in the collections of natural history. With all this information they have returned home, perfectly qualified to judge on this subject. And they have decided that the canvass-back duck is really one of our steady visitors during the winter season.

Since this opinion was established, their price has raised from fifty cents to two dollars, and sometimes three dollars a pair.

Sketches, historical and descriptive, of Louisiana. By Major AMOS STODDARD, *Member of the United States Military Philosophical Society, and of the New-York Historical Society.* 8vo. pp. 488. *Philadelphia.* Carey. 1812.

IT has been our endeavour, from the commencement of the connection of Louisiana with the United States, to lay before our readers a true and full account of its topographical, physical, and statistical condition. Accordingly, in Med. Rep. vol. vii. p. 390, we gave the abstract of the documents in the departments of State and of the Treasury at Washington, relative to this extensive country. In the same volume (first of the second Hexade), p. 406, is inserted the report made to the House of Representatives for exploring it. Other pieces of information immediately follow that document, (ibid. p. 409—414.) Afterwards,

(ibid. vol. ix.) we described its lead mines (p. 86) from Austin; its rivers from Dunbar (p. 305); Soulard (p. 308); and Sibley (p. 425). In volume ten, the observations of Stoddard (p. 44); M'Kay (p. 27); and the President of the United States (p. 165), convey the most interesting intelligence concerning Louisiana. Nor is the subject discontinued there; for in volume eleventh, Heriot (p. 166); Gass (p. 185); and Pike (p. 297); are presented to the reader as offering the amount of their respective valuable labours. And in vol. xiii. p. 402, the very work now before us, was announced as in a state of preparation for the public eye.

Major Stoddard appears before us as the officer who, in 1804, took possession of upper Louisiana, under the treaty of cession. He availed himself of his high and favourable situation, to acquire all the knowledge in his power concerning the French and Spanish systems of colonial government, the administration of the laws, and the civil and natural history of the country. He enjoyed more than five years the advantages of travelling through those regions, of consulting the public records, and of conversing with intelligent persons. And with such opportunities and advantages, this brave and experienced, though modest and unassuming gentleman, appears before the tribunal of the reviewers.

Aware of the variety and intricacy of his subject, he does not give a detailed or entire history of Louisiana. On the contrary, he claims for his work nothing more than the humble title of *Sketches*. These the author has arranged under seventeen chapters. Of them the three first are employed chiefly in recounting the discovery, settlement, and population of Louisiana, with the contiguous provinces of Canada and Florida. They constitute a valuable and instructive summary of the occurrences which have distinguished those regions from their earliest beginnings to the present time. The city of New-Orleans, the Delta of the Missisippi, the territory from the Gulf of Mexico to the Achafalaia, thence to the river Arkansas, and to higher tracts to the northward, are described in the six following chapters, as are also the grants of land, the regulations and ordinances for society, the state of trade and the arts, and the condition of the people as to learning and religion.

We recommend to the perusal of our readers the eleventh of these chapters, comprehending the character Major S. has drawn of the Louisianians. It contains the delineations and touches of an actual observer, who possesses the power to distinguish nicely and to describe well. We also point the attention of such as wish to know the situation of the negro slaves to his twelfth chapter. They will therein find a faithful picture of forty thousand degraded beings, followed by remarks on the subject, worthy of a free, liberal, and sympathizing writer.

The antiquities of Louisiana, such as old fortifications, and tumuli or hillocks, and some other matters, are described in the thirteenth chapter. The fourteenth is employed in an account of the mountains and rivers. The shining mountains are noted as being several hundred miles broad, and as giving rise to the vast Missouri, which reaches the Atlantic ocean, after running a course of four thousand four hundred and sixty miles. The crumbling hills are mentioned, which, consisting in a great proportion of a fine white clay, and standing to the eastward of the before-mentioned ridges, are continually wearing away by the waters, and imparting to the Missouri its muddy and slimy thickness. The cataracts of the Missouri are enumerated, which consist of four great falls, and several smaller ones, amounting in the distance of eighteen miles to rather more than three hundred and sixty-two feet. The lowest of these occurs seventy-one miles below the mountains, two thousand five hundred and seventy-five miles above the conflux with the Missisippi, and three thousand nine hundred and forty-four from the Mexican gulf. The magnificence of these streams was in some measure displayed in Med. Rep. vol. viii. p. 292, vol. ix. p. 315, vol. x. p. 288, and vol. xi. p. 200, from the best materials extant, the written and oral reports of the most distinguished travellers.

The salt, lead, ochre, coal, salt-petre, and copper of Louisiana are treated of in the fifteenth chapter. The author enumerates silver, and even gold among the mineral productions of that region; the former having been extracted from an ore found near the river Merimak, and the latter gathered in the form of dust at the mouth of a rivulet on the Arkansas.

He has devoted his sixteenth chapter to a disquisition upon the aborigines, or native inhabitants of America. He relates their employments, social condition, treatment of their women, manners and customs, in considerable detail. He affirms that beards are as natural to them as to other people, and that their bodies are furnished with the usual proportion of hair; but that they pluck it out from certain parts with tweezers as fast as it grows, because they deem a bare skin more favourable to cleanliness. He thinks there was a time when they were much more populous than at present. And he derives the primitive population not only from Norway and Tartary, but from Africa, Australasia, and more especially from Wales in Britain.

On the emigration of a colony from Cambria to North-America, in the year 1170, under Madoc, a Welch prince, Major S. has written his last and concluding chapter. He is firmly persuaded that such a colony arrived, and that their descendants inhabit at this day some interior and not well-ascertained section of our continent. We had supposed that this opinion had been abandoned by its adherents, as improbable at least, if not incredible. But our historian supports the notion with much learning, ability, and research. Though the evidence is not by any means conclusive to our minds, we nevertheless consider the dissertation as highly curious and entertaining. And we recommend the perusal of it generally to such as are fond of ingenious speculation, and particularly to those who feel a pride in tracing their genealogy to a Celtic origin, or in deriving their pedigree from the old inhabitants of Plinlimmon and Snowdon.

As a specimen of our author's manner of writing, we should, if we had room, insert his description of the great natural rafts of timber over the Achefalaia and the Red River, p. 178-9, and 189-90.

His remarks on the climate and diseases are extremely important, especially as the author possesses that good sense and discriminating judgment, which directs him to deny the contagiousness of yellow fever; but we can do no more than refer the reader to them at p. 169—173.

We cannot repress the expression of our regret that our country has no generic, appellative, or national name. While the Brazilians, the Chilians, the Peruvians, the

Mexicans, and even the Louisianians, the Canadians, and the Venezuelans, have their proper titles and denominations, our ill-fated people are called to this day, and by an officer of our army too, "*English*" *Americans*. Had this occurred but once or twice, it might have been passed over by us, as an inadvertent use of a term; but occurring as it does, in p. 211, 214, 220, 225, and various other places, we were so tired with the repetition, that we never wished so heartily that the worthies who declared the colonies independent of Britain, and the sages that framed them a common constitution, had incorporated in those invaluable instruments, a distinguishing and characteristic name. For want of it, the people are doomed to bear the denomination, and, as it were, to wear the livery of their former master.

There is a peculiar grandeur in the rivers of North-America. A description of their length, direction, and singularities, is comprehended in the space between the 353d and 388th pages. It will amply reward the votaries of taste, and the seekers after knowledge, who shall read it through. And we should enrich our pages with a copious extract, did not the press of other valuable matter exclude it. On the whole, we consider this publication both seasonable and valuable. It embodies much information, methodically arranged, and distributed under proper heads. And although the great amount of intelligence spread over our leaves, may have anticipated in many respects the contents of this book, we nevertheless recommend it to the studious and inquisitive, as one of the best which has been published upon the subject concerning which it treats.

Views of Louisiana; together with a Journal of a Voyage up the Missouri River, in 1811. *By* H. M. BRACKENRIDGE, *Esq.* 8vo. pp. 304. *Pittsburgh.* Cramer, Spear, and Eichbaum. 1814.

SO much has been said of Louisiana in the preceding article, that we should not offer any thing further on the subject at this time, did not an interesting volume lay before us, and solicit an immediate notice.

The writer is one of that class of travellers who go forth for the purposes of rational entertainment, of enlarging the mind, and of diffusing to others the knowledge they have acquired. It appears that in 1810, he went to upper Louisiana with the intention of establishing himself in the practice of the law. Not finding the prospect so encouraging as he expected, he relinquished the design of settling himself as a professional man, and devoted his attention to the physical, natural, and civil condition of the country. In the winter of 1811, he published, at St. Louis, descriptions of the regions he had seen. Many of his essays were republished in the periodical works. And so gratifying and flattering was their reception, that he was under no small temptation to abandon the lucrative business of the bar for the unprofitable calling of an author. Shortly after he ascended the Missouri river with Mr. Manuel Lisa, commander of a party of fur-traders, and accompanied him to the land of the Aricaras, near fifteen hundred miles up. During their passage up that majestic stream, he and his companions overtook Mr. W. P. Hunt, and a company of adventurers, bound for the Columbia river, on the north-western coast. Among these men he found Mr. Bradbury, (see Med. Rep. vol. xvi. p. 420) an English naturalist, with whom he had become acquainted at St. Louis. The amiable manners and scientific acquirements of this gentleman, rendered him a most valuable associate. Having taken an extensive survey of the streams, the adjacent lands, productions, and inhabitants, Mr. Brackenridge and Mr. Bradbury returned in safety to their starting-place early in August. The author thence descended to New-Orleans, and there, having met with Mr. Cramer, made with him an arrangement for the publication of his "Views" and of his "Journal."

He justly considers the regions of which he treats as forming most interesting portions of the new world. He says that the person who would aspire to the highest order of travellers in such a country, must be well instructed in natural history. In the latter he acknowledges his very moderate proficiency; and expresses regret that he has withdrawn even so much of his time from professional studies to that employment. He entertains a trembling apprehension, lest the character of a man of science should

be fastened upon him. And in a state of society like ours, where a mere suspicion of possessing eminent attainments of this kind, too often lessens the confidence reposed in an individual as a man of business, it is certainly discreet to avoid the imputation. Acting, as he does, under this prudential restraint, we can scarcely forbear to conjecture that Mr. B. possesses more of botanical, mineralogical, and geological knowledge, than he has thought proper to confess. And, if we might be permitted to express our regret, it would be, that from the rich stores of his information on these subjects, he has not been intrepid enough to give his readers somewhat more.

The Views of Louisiana are contained in two books, methodically distributed into chapters.

The first and second chapters of the first book treat of the discovery, settlement, and boundaries. The third is employed in delineating its aspect, alterations, climate, extent, and importance. In the fourth and fifth are described the lakes, rivers, and indigenous productions of the three kingdoms in nature. In the sixth is a statistical summary of the native tribes, with observations on the trade in furs and skins along the Missouri, Missisippi, and their tributary waters. These topics have been dwelt upon in Med. Rep. vol. ix. p. 315, and in vol. x. p. 165—288, et seq. In the present work, the numerous bands constituting the thin and scattered population of internal North-America, are exhibited in the form of a very instructing table.

The seventh chapter contains Mr. B.'s account of the Columbia river and the adjacent tracts and settlements. To the text of the original we might subjoin the narrative of the persons who last returned by land, from the establishment made there. It is to be considered as a colony from Canada, and not a plantation from New-York. Did not the British government conceive it to be a possession of their own, they would long before this day have subdued or dispossessed the emigrants, as they did the Spaniards from Nootka Sound.

After conversing with Mr. Steuart, Dr. Mitchill made a memorandum in these words at New-York:

"The plains of upper Missouri and its waters, are almost of immeasurable extent. They are generally destitute of wood. For great distances there is no tree whatever, nor

the smallest shrub. A coarse herbage, about as high as the ankles, covers the soil, and nourishes the herds of bisons, (or buffaloes as they are erroneously called.) The dried dung of these animals afforded the party fuel, when nothing else could be got to support a fire. They often saw the creature called cabrie, which is a species of antelope; and the brelau, a kind of badger. The big-horn, or mountain ram, is the arguli, or ovis ammon. This party passed the rocky mountains in about 40° north latitude, through a defile not heretofore known; but which relieves adventurers from a great proportion of their toil and hazard."

The second book comprehends more particularly in its eight first chapters, the remarks of Mr. B. upon that part of Louisiana which, in consequence of the alterations made in its civil geography by congress, is now called the *Territory of the Missouri.* In the first four chapters he examines the boundaries, surface, and waters; the soil, face of the country from New-Madrid to the *Mammelles*, beyond the village of St. Charles; with a sketch of the climate and diseases, the political divisions, inhabitants, and population. The towns and villages are described; the character of the first race of settlers is delineated; and the history of the change that has taken place in the government is given in the two succeeding ones. The lead mines (for which see Med. Rep. vol. ix. p. 86) are examined in a particular manner in his seventh chapter; as the agricultural, manufacturing, and commercial resources are mentioned in the eighth. The ninth is devoted to the geography, population, and statistics of the new commonwealth formed in the lower country, bordering on the Gulf of Mexico; and the tenth and last to the fortifications, barrows, pyramids, and other remains of remote and unknown antiquity, which present themselves to the observation of the traveller in the extensive tract called the Valley of the Missisippi. For Bishop Madison's opinion of which we refer to Med. Rep. vol. viii. p. 303.

The inquirer who is desirous of examining the grand features of nature on this continent, particularly in relation to the size and extent of the rivers, is requested to examine Mr. B.'s summary of their navigable ramifications through our parts of North-America, in pages 51—53. It exhibits

a spectacle of streams, which for their magnitude and convenience have no parallel on the terraqueous globe, or if they have, it is in the southern section of the western hemisphere alone.

The information contained in these pages, is worthy of consideration in several novel and peculiar aspects. 1. He observes, p. 71, if the savages have any particular object of adoration, it is the head of the buffaloe. This animal is not the buffaloe, but the bison, the creature which zoologists consider as the parent of our domesticated kine. It can hardly fail to strike the attention of every reader acquainted with Asiatic usages, what a resemblance there is between the adoration of the bison by the Aricaras, and of the cow by the Hindùs. 2. The existence of *six* primitive languages is a memorable fact. Admitting these people to have been descended at some distant period from the Tatàrs, how remarkable and peculiar must have been their condition, to have lost so much of radical similitude as now to possess a total distinctness of tongues! (p. 72.) 3. The Sacs and Foxes present a new case to the speculative reasoners on man. They have vast lead mines in their possession, not far from the Prairie du Chien, north of the place where the Ouisconsin empties into the Missisippi. In the scarcity of wild game, this race of hunters have passed at once to the state of metallurgists and miners. They smelt their galena, turn it into metal, and sell it to the traders, (p. 65.) Thus they have turned manufacturers, without passing regularly through the pastoral and agricultural stages of society. The occurrence is one of the most singular that marks the progress of man from rudeness to refinement. 4. Except the fixed or stationary habitations of the Osages, Mahas, Poncas, Panis, Aricaras, and Mandanes, all on the south-west of the Missouri, the various other nations lead a life similar to the roaming shepherds of Asia, (p. 70.) There is nevertheless this difference between them; the Tatàrs possess vast herds of domesticated cattle, which they drive before them from place to place, for pasturage; while the Sioux pursue another sort of bucolic employment, following and surrounding the wild bisons, and when they have killed and devoured one drove of them, marching on in quest of another.

(See Campbell's narration, Med. Rep. vol. xi. p. 200.) These traits of human nature deserve the most attentive consideration of philosophers.

But Mr. B. has not only laboured to establish truth; he has as zealously sought to remove error. He is silent as to the salt mountain, which its chief executive magistrate formally announced to the nation. And observes, that the *salt-rock* (if there be any such thing) has not been described by any person who has examined it, (p. 66.) He repels the notion of Welsh Indians, (p. 183) as utterly groundless, and unsupported by any testimony worthy of credit.

But of this enough—we refer to the book for the author's opinion of the climate and diseases, p. 111.

We were about to copy his account of the principal rivers from p. 37, et seq.; but we changed our mind for two reasons, that room is wanting for its insertion on our pages, and that it would deprive our readers of the pleasure of perusing the grand description in the work itself. We make the same remark, and offer the like apology for omitting to insert the animated history of the huge artificial works of a people wholly unknown to us, which are scattered in the Illinois, near Kahokia and Kaskaskias, and far and wide over the regions of the west, p. 181.

A System of Anatomy, for the Use of Students of Medicine. By CASPAR WISTAR, *M. D. Professor of Anatomy in the University of Pennsylvania.* Two Vols. 8vo. *Philadelphia.* Dobson. 1811 and 1814.

THIS is another respectable elementary work from the medical school of Philadelphia. There are however so many such treatises of all nations and languages, that the merit of discovery, or the claim to an improved *system* of demonstration, at this late period, is doubtful, or very questionable. But if an eminent professor has adopted a plan which, in conformity to his comprehensive views, proves to be well calculated to promote the science which he is appointed to teach; and if, upon experiment, his

chair is annually encircled with numerous students, who, by their talents and acquirements, are soon able to obtain not only the merited academic honours, but the confidence of their fellow citizens, in filling up the professional ranks, then we may safely conclude that the system of anatomical instruction thus laid before the public, for the benefit of students, is good; that it is composed and arranged with due regard to the importance of the subject, and to the difficulties and disgusts with which it is surrounded.

Under these impressions we might have been justified in announcing and recommending the present system on its undoubted grounds of usefulness, were we not bound by the nature of our periodical records, to explore and examine critically whatever new source of instruction may become interesting to our readers. On fulfilling, however, our editorial review, and before we give a detailed account of this work, we feel happy in observing, that, in a general point of view, it will obtain a distinguished rank in the medical and bibliographical catalogues.

1. The two volumes are divided into eleven parts, each of them respectively distributed into chapters and sections. Osteology constitutes the first, than which no similar treatise could be more descriptive, minutely detailed, and yet concise. We have been led, however, to make a few remarks, by the following text on the formation of bones, vol. i. p. 5.

"The generality of bones, and particularly those which are long, are originally formed in cartilage; some, as those of the skull, are formed between membranes, and the teeth in distinct bags.

"When ossification is about to begin in a particular part of a cartilage, most frequently in the centre, the arteries, which were formerly transparent, become dilated, and receive the red blood from which the osseous matter is secreted. This matter retains for some time the form of the vessels which gave it origin, till more arteries being by degrees dilated, and more osseous matter deposited, the bone at length attains its complete form.

"During the progress of ossification, the surrounding cartilage by degrees disappears, not by being changed into bone, but by an absorption of its parts, the new-formed bone occupying its place."

Nothing is exceptionable in this exposition, nor can it be subject to criticism from any known dispute or controversy; but its being re-echoed could not make it more correct or credible that the formation of a bone requires a pre-existing cartilage, which in its turn must be absorbed and destroyed, before osseous matter is secreted and accumulated. This complicated operation is certainly contrary to the simple and expeditious ways of nature. We do not find that a solid cartilage must precede the formation of a regenerated bone in cases of fracture and resection, nor of the new cylinder around the sequestrum of a necrosis. As for any bone or part of bones during the period of fœtal existence, which are thought to be cartilaginous, it may be asked whether they have or have not such character? The fact is, that bone and cartilage are very differently organized. Modern experiments are known,* and noticed by Professor Wistar himself, showing the existence of a vascular net, which, when divested of the earthy matter, resembles the bone in size; while by any maceration or preparation, cartilages are resolved only into a mass of parallel fibres; we must therefore conclude that the organization of bones and cartilages is different, and each *sui generis*, even if some earthy matter is found in the latter, as it is or may be deposited in them and other parts, by the effect of old age or disease; that in the original formation of cartilage there is no change nor absorption of this for the completion of bone, although the vascular tissue or net in the fœtus, which is prepared for the reception of the earthy matter, may temporarily appear hardened by the conjestion of much condensed gelatine. If bones were formed within an organized mass of cartilages, there would be a similarity in their nature, which observation and facts entirely contradict, for in case of lesion or disease, the latter are not known to exfoliate nor to regenerate.†

2. Myology is the subject of the second part, and is terminated by an alphabetical arrangement of all the muscles. The author has remarked in his preface, that he had been in want of the anatomical works of Soëmering and

* Vide Medical Repository, vol. xi. p. 173.

† Vide Hunter, Haller, and Fourcroy's Systeme des Connoissances Chimiques.

Scarpa. We suppose that the principal help to be derived from these celebrated publications is relative to the anatomy of the groin, or of the muscles and other parts contributing to crural herniæ, especially of females. It must be confessed that the importance of this subject, in a practical point of view, would require more than general indications in an anatomical treatise. From the above works, and those of Astley Cooper, all to be seen in the New-York Hospital Library, it is evident also that students should receive additional instructions on that detached subject, with a new set of preparations or plates. This task, we have no doubt, is learnedly discharged by the present author, through the course of his lectures.

We find that he considers it as an undecided question, whether contraction of muscles is or is not an exclusive attribute, which, when exercised in other parts, indicates in them the existence of muscular fibres. (Vide vol. i. p. 168.)

We believe that a contractile power belongs to all parts of the human body (the nerves excepted.) Some writers have even pointed it out in the vascular tissue of the bones. It was also another error to assign a greater degree of contractile power to voluntary muscles, since that of the heart and of the uterus do surpass, or indeed equal the other. Contraction cannot be said to be a characteristic attribute of muscles; unless it is defined as a contraction of *loco-motion:* in other parts or membranes, it is only a contraction of *loco-position.* In the first, motion is the end intended by nature; in the latter, it is the means only of obtaining some other effect.

Muscular contraction has been the subject of a more interesting inquiry as applicable to Ætiology. (Vide Dictionaire des Sciences Medicales.) It has been represented as exclusively determined by the sensibility imparted to each part of the system by a less or greater distribution of nervous fibres. Numerous facts and striking analogies in all animated creation illustrate the phenomenon. Hence new diagnoses in diseases may be established, according to the abolition by morbid causes, of muscular contraction, or of corresponding sensibility. The renewal of these powers, or a control over their activity, if accurately regulated, would disclose to medical philosophy new remedies and modes of curing diseases.

3. In the third part, of the *ligaments*, *articulations*, &c. we notice an abridged appendix on *the motions of the skeleton.** The anatomy of all those parts on which the statick strength and the mechanism of motion depend, is so important, that it could scarcely be satisfactorily demonstrated in a general treatise. Besides the myology of Cowper, so scientifically instructive on that subject, we would beg leave to point out the very recent and splendid French work, of the *Gladiateur Combatant*, by Jean Galbert Salvage, M. D. of Montpellier. All the drawings are taken from antique models, and from the bodies of many slain athletic duelists.†

4, 5. The anatomy of the brain, of the eye, and of the ear, composes the fourth part; and the fifth is filled by that of the general integuments, or the cellular membranes, and the skin. Whether an abridged and general view of internal membranes, which are incessantly in the way of the dissecting knife, and are so remarkable in their connections, in their respective functions and sympathies, should be naturally wished for in this part, we must leave to the critic to decide, and to the student to try.

6. In the sixth part the author resumes, in three chapters, many organs of the head omitted in the fourth; to wit, the nose, mouth, and throat. Here we must confess there is a striking disconnection of materials, and similar to that he has made of the nerves from the brain and the spinal marrow. On reflection, however, the author escapes censure, having informed us that he wrote for students "in the method observed in the demonstration of the anatomical lectures." However different *methods* might be in other schools and theatres, we well conceive that they must differ, from the difficulty of procuring subjects or preparations fit for ocular demonstration.

7. The thorax and its contents supply materials enough for the seventh part, rendered still more interesting by a considerable body of physiological observations on various phenomena of respiration. In vol. ii. p. 71, we read the

* The skeleton is no cause of motion, and participates to *loco-motion* only, as a part or a support of the whole fabric, with even some exception, as in the eyes, tongue, &c. The skeleton has no participation to motions of *loco-position*.

† This work is to be seen in the Library of the New-York Hospital

following words:—" The nature of the process of respiration, and its effects upon the animal economy, particularly upon the action of the heart, appear to be much better understood at this time than they were before the discovery of the composition of the atmosphere by Dr. Priestley and by Mr. Scheele."

We rather wish that more justice should be done to the first discoverers of the elementary gasses which constitute atmospheric air and water—to Lavoisier principally. It was really with this new system that the true physiology of respiration was well understood, and probably shall never be better defined. As for Priestley and Scheele, we acknowledge that by their transcendent experiments they paved the way to a new æra of physical science; but in point of discovery, we could institute a far more anterior and substantial claim in favour of John Mayow, of London. In the works of this celebrated man, we see the mystery disclosed of the constituent parts of atmospheric air; and how these contribute to life and respiration; the whole as physiologically explained as any of our modern *discoverers* have done.*

8. Professor Wistar has paid great attention to the eighth part of his work, which treats of all the contents of the abdomen, and is rendered very instructive; but nothing could surpass his remarkable accuracy and indefatigable habit of observation than his description of blood vessels. Of this part of anatomy every practitioner may testify its importance, as well as the insufficiency of demonstration in many of the present and actually celebrated schools.

10, 11. The two last parts, on the nerves and on the absorbents, terminate this useful treatise, with as many references to physiological explanations as could be admitted in the narrow limits of two volumes.

A glossary is added, giving the derivation from Greek and Latin of certain anatomical terms. It is an excerption from Hooper's Medical Dictionary; but considering how extensive is the language adopted for that science, this glossary is indeed insufficient, and contains not even as many words as there are under the first letter of Winslow's

* Johannis Mayow, Londinensis, Doctoris et Medici, &c. Opera omnia Medico-Physica, &c. Hagæ Comitum. Anno MDCLXXXI.

glossary, at the end of his treatise, a perfect model of descriptive and laconic composition.

There is not in natural philosophy a more difficult task than that of delineating by words the internal and external structure of the human body. Memory itself cannot accomplish it without incessantly recurring to subjects of demonstration. This even must always be guided by methods of classification, and by those analytic rules which are the best calculated to fix the attention and stimulate the emulation of the student. Here the teacher has nothing to expect, in assistance to his arduous task, from innate taste and aptitude of his pupils, from anticipations of natural genius and imagination in the proposed attainment. Far from it; the whole is at first horrid and repulsive; it continues offensive to the senses, damps the energies of intellectual powers; it never ceases to be endangered in its successive progress, unless the learned Professor seizes upon every opportunity to interest the mind, to satisfy the reason by explaining the laws of vital existence. He then can gradually captivate and train his adepts to anatomical science with more power and authority than an enchanting conjuror could with his magic wand create wondrous deceptions, and astonish his unsuspecting admirers.

That the work thus considered is well calculated to teach the science of anatomy, is our decided opinion, while we feel happy to offer it as a new testimony of the rapid strides of our seminaries of learning towards their emancipation in these free states, from foreign scientific elementary tuition. It is time for them no longer to be tributary to the celebrated schools of Europe, to which we no more can feel proud to trust the medical education of our youth.

American students of medicine should exclusively prefer for their instruction elementary books composed by their learned countrymen, if especially they equal in point of matter, or surpass by methodical arrangement, other treatises. The great family of mankind, it is true, should not be marked by partialities and discriminations in the attainment of sciences which equally concur to the preservation and happiness of all; there is, however, a dignified patriotism and a national honour to be indulged, in setting forth with estimation our intellectual resources, as we

would endeavour in commerce to enhance the greatest value for our commodities and produce. If these are the means of procuring treasures, the others may in time protect the commonwealth against the introduction of moral evils; we mean the characteristic prejudices, corruption, sophistry,* follies, and instability of which the old world is a tumultuous theatre in the present age. But we may present other incentives to American students of medicine, particularly claiming their attention to this and other works. They may be reminded that American names are already inscribed in the annals of moral and natural philosophy; and that medical science has also received important contributions of physiological doctrines and precepts from many of our departed or living writers, to which numerous attempts of opposition on this or the other side of the water have attracted many more adherents; which, if not refuted, must tend to reform one half of the theoretical systems of the old world in the management and prevention of epidemic diseases. We may therefore conclude that many branches of the healing art have been and will be improved in this country. An appeal to past, may justify an appeal to future progress of a science which has been so zealously promoted by the liberality of our richest states, and by the talents and diligence of our medical institutions.

* Vide an Attempt to revile and debase the American Character. Quarterly Review, No. XX. Jan. 1814.

Medical & Surgical Correspondence.

Practical Observations on the Medical Qualities and Efficacy of the ERGOT, *or* SPURRED RYE: Pulvis ad Parturientes. *In a Letter to Dr. Samuel Akerly, Hospital Surgeon United States Army, by Malachi Foot, M. D.*

Grotto-Hill, Sullivan County, Feb. 1, 1814.

DEAR SIR,

I HAVE, more than once, promised myself sufficient leisure to furnish you with some observations on the use of "*the Ergot in Parturition.*" I had, some time past, drawn up in detail, a history of my practice therewith, noting the particular cases, with a view to commit it to your disposal; and the immethodical and cursory form of this paper arises from its being an abstract, the original of which is objectional from its length.

In all the cases in which the ergot was indicated and used in my practice, it has appeared uniformly efficacious and salutary; and while bearing testimony to its utility, I feel the more confidence, as in my hands it has been exhibited undisguisedly, and its uniform operation observed by all in attendance. In the summer of 1810, I was able from our rye-fields to procure a supply of this article, which at harvest was abundant and of a large size.

The first case in which it was used was that of the wife of J. P. J. Esq. on the 2d August, 1810. Her protracted and tedious travail arose from very feeble contractions, in a case of natural presentation. Her husband was informed by me of the ergot, and of my authority. Being acquainted with Dr. Stearns, (to whom for his bold anunciation of this valuable desideratum, medicine is much indebted) he was desirous to try it, and immediately from his rye-field procured a half tea-cup full; it was given in decoction, and its salutary effects were not to be doubted.

In a twin case, that of Mrs. Nelson, in the summer of 1812, its efficacy was noticed in its speedily augmenting

and accelerating the feeble and tardy parturient contractions, and in suffering little or no intermission between the births, though a case of distinct and separate membranous and placental apparata.

On the 5th September, 1811, I with reluctance quit my field and labourers to visit Mrs. H. of Pleasant-pond, in travail with her first child. While occupied in this engagement, I was desired to attend the wife of a Mr. Pinter, at White-lake, a distance of fourteen miles. In addition to these two cases, I was detained on a similar errand about fifteen minutes, with a woman living intermediately, and half the distance. The ergot was given in two of these cases. The whole time occupied from home was ten hours, and the distance travelled was over thirty-four miles. If in these cases a grateful sense of obligation, now well recollected, the result of a conviction of its expediting powers in parturition, can furnish an argument in favour of the utility of the ergot, such an one, Sir, is not wanting.

I have generally given it to the amount of a half tea-cup full, pulverised with a few cloves, in decoction, and in a pretty recent state. It is a little pungent of itself, and when given in large doses, if I mistake not, is apt to nauseate, if not to produce some faintness. The period of its visible effect is from six to fifteen minutes. In the case of Mrs. B. it was given more in deference to the solicitude of an attendant matron, than from a conviction that it was indicated. The delivery was effected within a very few minutes of its exhibition, but I was not a little surprised, to observe the contractions were not interrupted by that event, and continued to be distinctly marked, and at frequent and irregular intervals, for twelve or fifteen minutes.

The ergot is pretty extensively used by female accoucheurs in the northern states, and, I believe, its utility has been a long time known to some of those matrons in the eastern parts of Connecticut. Were I called on to explain the methodus operandi of this article, as a necessary *sine quâ non* with those who are disposed to lack of faith, I shall merely observe, that in this case as much is known as with many other articles of the materia medica, whose efficacy is not doubted. One indulgence the ergot may justly claim, from those whose scepticism may call in question the evidence of the senses, that it receive not an un-

qualified anathema, until the laws of the animal economy, (whether in a morbid or sound state) like those of mechanics, are more distinctly defined, or the science itself has arrived at its *nec plus ultra.*

The phenomena consequent upon a dose of the ergot, in those cases in which it is indicated, I think will generally be found as follows:—After a lapse of six or eight minutes, the patient begins to manifest an augmented sensibility to her burthen; her mind becomes more irritable, and she discovers sudden and constant impatience. She becomes restless, complains of her position, and distorts her body. She peevishly remonstrates at the indifference and neglect of her attendants, and, in the rapidity of her ideas, seems to have acquired a new estimate of time. Her pains increase in force and frequency, and, in some cases, suffer but small intermissions until delivery. In addition to these phenomena, which may occur in ordinary cases, there is an evident diminution of resistance to the progress of the fœtus. So far as analogy may illustrate this subject, an accoucheur, noticing the sudden and free relaxation consequent upon the ergot, and to a degree apparently disproportionate to the parturient contractions, is reminded of the efficacy of venesection, of narcotic and nauseating medicines in dislocations of difficult reduction.

Dr. Bree, who, in his invaluable book on asthma, by pursuing the Darwinian doctrine of associated motions, has treated his subject with more than ordinary success; has also, by his facts and reasonings, furnished analogies greatly illustrative of this subject. He has shown, you will recollect, by his reasonings and by dissection, that asthma (whose proximate cause consists in the operose and augmented contractions of the muscles subservient to respiration) has often for its remote cause, the irritations of an hepatic disease, obstructions in the abdominal viscera, and, at times, even the remote stimulus of venal calculi. Specific irritations excite pretty uniform trains of associate motions and contractions; as is beautifully illustrated by the organs of sense, whose phenomena are now known to be perfectly analogous to, and illustrative of the laws of the muscular system generally.

In many asthmatic habits, particular articles of food, by their specific irritations of the stomach, are uniformly pre-

ductive of those laboured muscular movements constituting that disease. An imprudent use of vinegar or sour wine, with myself, is uniformly followed by dispnœa, and often by several severe paroxysms of asthma. What may be the effect of a free exhibition of the ergot in health, is a distinct consideration: given as a remedy in the parturient disease, when the gravid uterus has become " a centre of association," and the whole muscular system is prone to a readily co-operating excitement, its effects appear not less uniform than innoxious and salutary.

I do not recollect, if in your paper on the ergot, you notice Dumonceau. In a treatise on husbandry, translated by the botanist Millar, he has a chapter on the ergot, and states that the peasants of Sologne, in seasons of scarcity, neglect to cleanse their rye of this article, and says, " then it is that they are infected with a dry gangrene, which causes the extremities to fall off, almost without pain or hæmorrhage; these motionless spectres have been seen in the Hotel-Dieu, at Orleans, with nothing but their trunks remaining; and they have, nevertheless, lived in that state several days." Dumonceau is of opinion that the spurred rye, like the gall-nut, is occasioned by the puncture of an insect;* and states that its singularly noxious qualities, when taken in quantities for food, are so well ascertained, that they have been fully described by Dodard, Languis, Lagon, Delahire, Noel, and M. Salerne.

A remarkable Instance of Recovery from a general DROPSY. *Communicated by Dr. V. Utley, Aug.* 13, 1813.

Sept. 24th, 1810, I was called to visit a son of Mr. Ezekiel Wade, of Lyme, about nineteen months old. He had been ill about eight weeks. I was informed, by the parents of the child, that a few days prior to his illness he was divested of his clothes, and washed in cold water drawn from a well, at a time when his body was unusually

* Dr. Akerly has seen the larva of this insect in the sample of spurred rye collected by himself when on a visit to the country some years since.

warm, by exercising in the heat of the sun on a summer's day.

Soon after the cold water was applied to his body, a fever commenced, and continued three quarters of a lunation; then the dropsy made its appearance, which was combated in the usual form by a respectable physician.

I found the patient apparently in the last stage of the dropsy. The cellular system, from the crown of his head to the sole of his feet, was filled with water, except his arms, which were emaciated. The genital parts, both the scrotum and penis, were so swollen, they appeared to the eye like a bladder inflated with wind: the penis in a serpentine form. The eye-lids were swelled and nearly closed. The external parts of the cranium felt soft, and would leave the impression of my hand when applied. In fine, he was labouring under the hydrocephalus externus, the anasarcous hydrocele, and anasarca, together with the true ascites. The child, to appearance, was really a monster. The whole system, except the arms, were swelled to an enormous size, and exhibited a smooth shiny surface. He measured nearly three feet in circumference near the umbilical scar. Aphthæ had began, and nearly covered the tongue and fauces. The surface of the body and limbs to my hand felt cold; but the pulse was 108 pulsations in a minute, and very feeble, &c. Respiration (as he lay in the cradle) was performed with difficulty, by reason of the collection of water in the cavity of the abdomen pressing on the diaphragm, and thereby impeding the motion of the lungs. He voided but little urine, and that was high coloured. It was with much difficulty that I could discover the undulation in the cavity of the abdomen; but I satisfied myself that there was a collection of water there.

He had taken but little nourishment the last forty-eight hours. To appearance death was about to close the scene. As the last resort, an operation having been proposed, I introduced the trocar into the cavity of the abdomen, on the right side, about equal distance from the spine of the ilium and umbilical scar, and drew off about five pounds of lymph, which was as clear as a dew drop. This quantity of water taken away did not lessen the circumference of the abdomen but very little; yet the child could respire with more ease than before the operation was performed.

I dressed the wound and applied the tail bandage, and drew it as tight as the child could bear without obstructing respiration. Gave some tinct. op. and ordered the dose to be renewed once in eight hours, and left him under the care of the attending physician.

About forty eight hours after the operation was performed, I visited the child again in consultation. We found the patient several inches smaller round the abdomen than he was when I left him on the day the operation was performed.

The dropsical swelling seemed to be diminishing from every part of the system. The attendants judged that there had been more than two quarts of water discharged from the wound made by the trocar during my absence. This water, I concluded, drained off from the cellular system of every part of the body; he voided but little urine.

The child was living; but the vital heat was nearly extinguished. He lay in the cradle with his clothes wet from his bowels to his feet. All his limbs, head, and ears felt cold; countenance pale, &c. Extreme debility pervaded the whole system, except diarrhœa, which had not taken place. The aphthæ had increased to that degree that they covered the tongue and fauces. No pulsation in the wrist, and he was comatose withal. Water continued to discharge from the wound.

While in this deplorable situation, we stripped him of his wet clothes, and fomented the lower limbs with a decoction of aromatic herbs, applied friction over the body with flannel, moistened with equal parts of soft soap, vinegar, and sea salt, and gave large doses of diffusible stimuli internally. After this I wrapped him in warm dry flannel. By this means the child became warm in a few hours, and pulsation appeared in the wrist again.

I prescribed the same medicine daily as before, to be applied both externally and internally, according to the urgency of the symptoms, as the body was more or less cold and debilitated. Gave calomel, opium, cort. Peruv. wine, some alkalies, and such kind of food as best agreed with his stomach, which loathed animal food. Bread and milk was the only food which he seemed to crave.

The infant remaining under the same mode of treatment, was gradually cured of all dropsical symptoms; he however

experienced various alarming affections, and a lingering state of debility, from which he completely recovered afterwards, with the help of tonics and diffusible stimuli.

Opium in this case (after the operation of paracentesis) "seemed to possess almost an exclusive power of acting alike upon the arterial, the lymphatic, the glandular, and the nervous system." The efficacy of this medicine in dropsical cases has been attested by Dr. Willis, and several other practical writers.

Would a wound in some part of the body, penetrating deep into the cellular system, cure the anasarcal dropsy, without any connection of ascites?

A Case, with the Dissection after Death, of Water effused into the Ventricles of the Brain, in an adult Subject. In a Communication from James C. Bliss, House-Surgeon of the New-York Hospital, to Dr. Mitchill, dated Aug. 31, 1814.

On the 25th day of March, Lot Handy, a man who followed the rafting of timber down the Hudson to New-York, was received into the New-York Hospital for a white swelling of the left ankle joint. He was nineteen years of age, and apparently of a good general constitution. His disease was caused by a contusion received in the pursuit of his business. For this he had been directed to employ cupping, blisters, ammoniacal plaster, poultices, fomentations, &c. with very little benefit.

Near the beginning of July he suffered an attack of fever. The symptoms were not unusual either in degree or duration, though the pulse was remarked to be small, feeble, and slow.

Under the use of antimonial powder with calomel, together with diluent drinks, and low diet, he recovered in a few days.

On the 14th of August a diarrhœa came on, with feverishness and head-ache. Dover's powders and calomel were given in small doses with benefit. On the 16th his febrile symptoms increased, with pain in the head and foulness of tongue. An emetic was given him, but with

very little advantage. On the 19th the looseness which had been checked became more troublesome; nausea and vomiting supervened, and the cephalalgia was very much increased. For these a mixture of lime-water and milk, cupping, and a blister to the back of the neck, were ordered.

At this time the inflammation of the diseased ankle became easier, and the discharge of matter from the abscesses was suspended. There appeared now a plain determination of the circulating fluids to the head.

For the two succeeding days the nausea and diarrhœa very much abated; but the head-ache was as violent as ever; the fever continued, and delirium came on, with increase at night.

A tendency to coma was observed on the 22d, manifesting itself in fits of sleepiness and torpor. The pupils of the eyes were observed to be dilated on the 23d. This led to an apprehension of an effusion of water in the brain. This symptom was first remarked in the morning, and was observed to increase during the day. The right pupil was more enlarged than the left. There was no paralytic affection of the limbs; but his intellectual faculties were very much confused and impaired. His vision was indistinct, and he remarked that he saw objects double. There was now a constipated state of the bowels. A blistering plaster was applied to the scalp, ten ounces of blood drawn from the temporal artery, four grains of calomel were administered every three hours; and no evacuation having been procured, an injection was administered in the evening.

The next day the symptoms were nearly the same. The temporal artery was again opened, and as much blood taken as before. Mercurial ointment was directed to be rubbed on the skin, and to be employed as a dressing for the blisters. The calomel was steadily contained by the stomach; but not producing a cathartic effect, the clyster was repeated at night.

25th. No mitigation of the disorder in the head, saving that he seemed to be sensible of great distress in that part, and to understand rather better what was said to him. The calomel was increased to ten grains every two hours, and a purging enema ordered in the morning. From the obstinate constipation of the bowels however, no alvine

discharges had taken place in the evening. He was then directed to take ten grains of calomel and ten of jalap every two hours.

26th. The pulse was feeble, the patient had slight convulsive action in the muscles of the extremities, and was apparently insensible to sound. In the morning the purgative medicine had produced no effect. The application of the blister was renewed to the back of the neck, and a cathartic of five grains of gamboge, ten of calomel, and ten of jalap ordered. This, by the aid of an injection, produced one copious stool, but with no relief of symptoms.

On the 27th the disease was evidently progressing. The mercury, although very freely employed, both externally and internally, had produced no effect on the salivary glands. Its further continuance was however thought proper, and to relieve the obstinate constipation of the bowels was combined with jalap, ten grains of each being given every two hours.

28th. The symptoms in the morning were evidently premonitory of speedy dissolution; and he expired about noon, without the occurrence of any remarkable symptom.

On examining the brain, the membranes were found to be turgid with blood. The pia mater particularly showed the ramification of the vessels remarkably plain. The cortical and medullary substance of the cerebrum was rather soft, but in other respects exhibiting a natural appearance. The ventricles were distended with a very clear lymph; about three ounces gushed out on opening the right lateral one. The fornix was raised from its natural situation by the distention of the accumulated fluid.

The plexus choroides was not so turgid as natural, and was of a paler colour than is usually exhibited.*

The pia mater enveloping the optic nerves at the point where they decussate, contained a considerable quantity of fluid, which had a similar appearance to that contained in the ventricles.

In the cavity of the abdomen traces of disease were evident. The omentum was shrivelled, and there was no fat contained between its membranous layers. There were

* This appearance of the plexus choroides, singular as it may seem, has been remarked in a number of dissections the present season.

appearances of inflammation in different parts of the intestinal tube, more particularly near the pyloric orifice of the stomach.

The abdomen had effused into its cavity a quantity of brownish green fluid, the smell of which was exceedingly offensive. The liver was remarkably small, in other respects natural.

The gall-bladder contained a considerable quantity of bile, apparently healthy.

The viscera of the thorax were not examined.

NATURAL HISTORY.

Fishes of New-York.

THE history of the fishes of New-York, and of the adjacent parts of North-America, was begun by Dr. Mitchill late in the autumn of 1813; and before Christmas he had described about seventy species. Partial lists had been made by the late Gerard Bancker, by Mr. Archibald Drummond, and by Anthony L. Bleecker, Esq. But none of these contained the characteristic marks of the species, or attempts at scientific arrangement. A few copies of his incipient catalogue were printed at the author's expense, and distributed among the curious. Since that time Dr. M. has continued his researches into our ichthyology; and fifty more sorts of fish have been found and described by him. Their various kinds already amount to one hundred and thirty; and many are known which have not yet come to hand. He acknowledges with pleasure the substantial service rendered to him by his friends Samuel Akerly and Samuel G. Mott, to whose excellent attainments in the medical profession are added uncommon exertion and skill in this valuable department of knowledge. And he mentions with no less satisfaction his obligations to the enterprising Mr. Scudder, for the very liberal manner in which he has

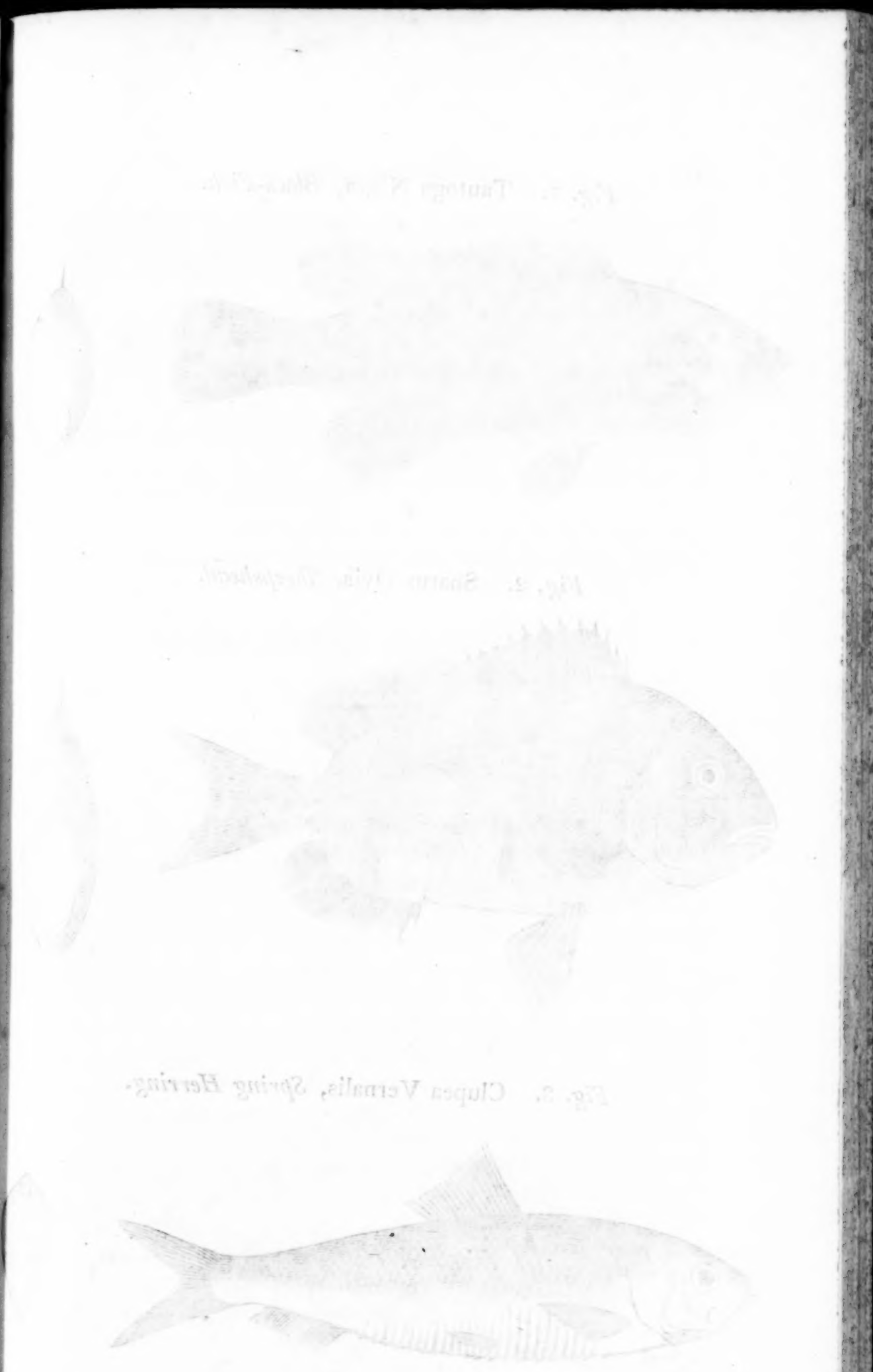


Fig. 1. Tautoga Nigra, *Black-Fish.*

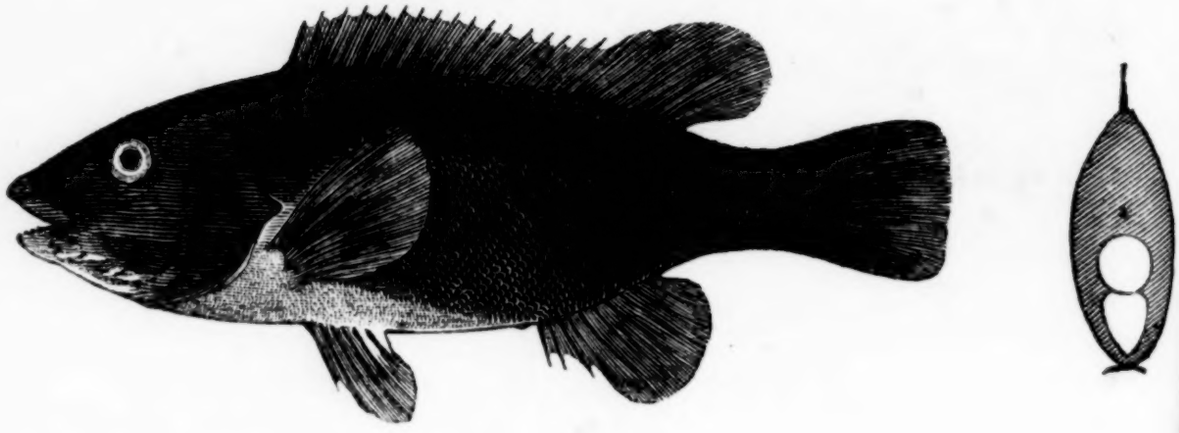


Fig. 2. Sparus Ovis, *Sheepshead.*

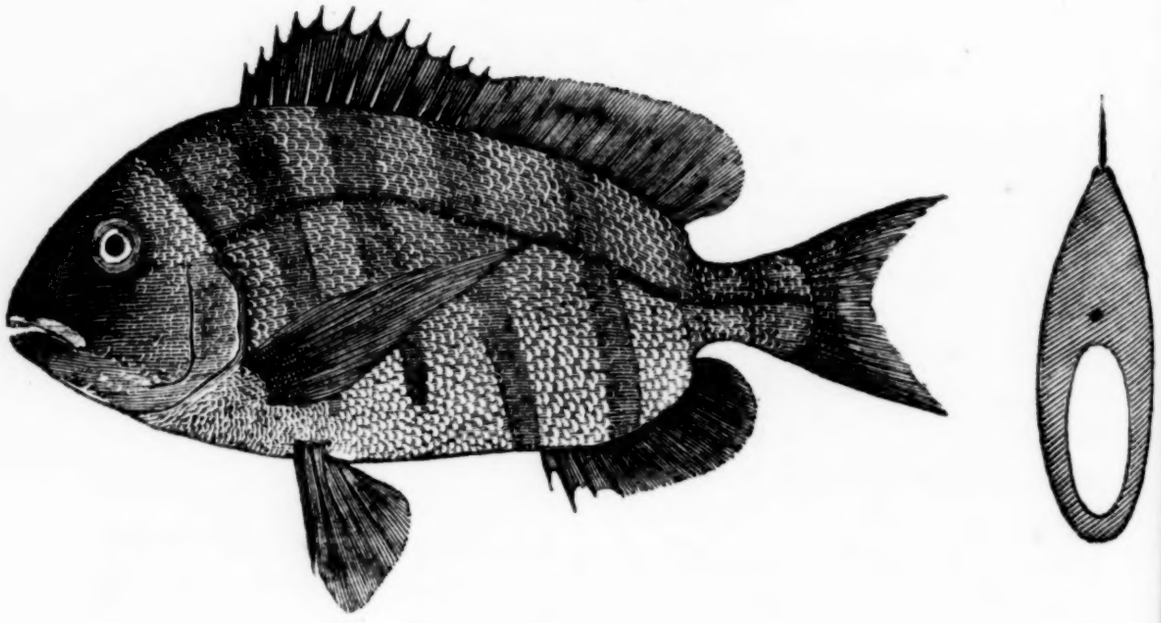
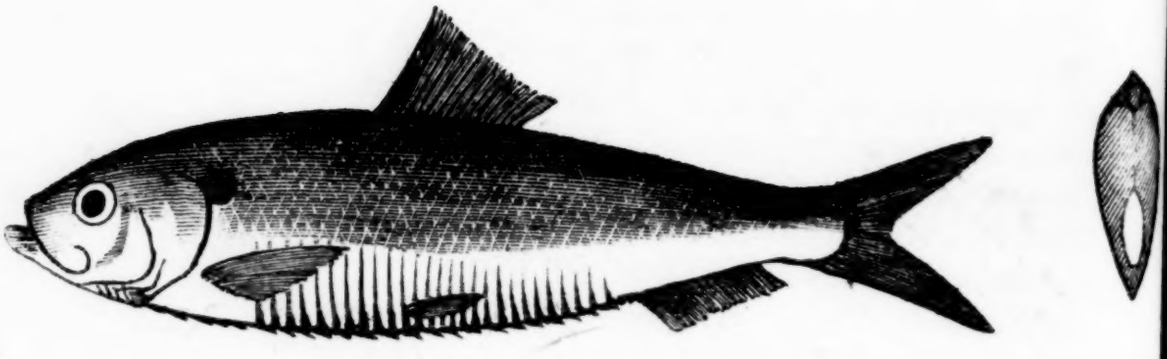


Fig. 3. Clupea Vernalis, *Spring Herring.*



S. Akerly, del.

A. Anderson, sculp

been permitted an examination of certain rare specimens in his museum of natural history.

Strange as it may seem, more than half the species of fish that inhabit the waters of New-York, appear to be unknown to writers. A further specimen of the performance is now presented. It contains the new genus of *tautoga*, including the four varieties of our *black-fish*, and the two varieties of the *chogset*. The descriptions of the *sheeps-head* and of the *alewife*, two other famous fishes of New-York, are also given, and incidentally the description of the *shadine* is introduced.

It may be observed, for the information of those who take an interest in such inquiries, that these ichthyological investigations are pursued with unremitted attention.

Tautoga. Black-fish. (Vide Fig. No. 1.)

This fish and his congeners might be placed among the numerous species of LABRUS or SPARUS, if the position of their ventral fins behind the pectoral did not render it necessary to assign him a different situation. In ranking them among the *abdominales*, it becomes necessary to furnish an appropriate generic character, to wit:

Head and gill-covers smooth.

Lips thick and covering the teeth.

One row of distinct teeth in each jaw, with rudiments of more.

Patches of teeth in the throat.

A single dorsal fin.

1. TAUTOGA NIGRA. *Black-fish of New-York.* Tautog of the Mohegans. Tide Black-fish, or Runners.

The name of this fish is derived from the colour of its back and sides, being of a bluish or craw black. Lips, lower-jaw, neck, and belly white, particularly in the males. Mouth rather small. Lips skinny or fleshy. Teeth to about the number of twelve in each of the jaws: the two front ones are the largest, and the rest of the respective rows gradually decrease in size. Within the regular empalements, are the points of smaller teeth, inserted with rather less regularity: they are sharp, distinct, and covered by the lips. Tongue white, smooth, lying close, but discoverable by raising. Tail entire, and somewhat

convex, the middle rays being rather more prominent than the upper and lower ones.

Gill-cover smooth, and neither scaly, serrated, nor rough. Extremities of the pectoral fins whitish. Nostrils double. Eyes rather small. Back rounded upwards and belly downwards, which, together with his well-covered cheeks and head, give him a very plump appearance.

Has a triangular patch of teeth, making a sort of bony pavement, in the lower part of his throat; and two roundish patches in the upper part, just before the orifice of the gullet. The seventeen first rays of the dorsal fin project with naked spines; and to each is annexed a ramentose process. Two spinous rays behind the vent.

Rays, B. 5. P. 15. V. 6. D. 28. A. 9. C. 15.

The black-fish abounds in the vicinity of Long-Island, and is a stationary inhabitant of the salt-water. He never visits the rivers, like salmon or sturgeon; nor, on the other hand, deserts his dwelling place as they do. He is fond of rocks, reefs, and rough bottoms. He is taken through the whole course of Long-Island sound, Fisher's-Island sound, and in the neighbourhood of Rhode-Island. The Tautog was not originally known in Massachusetts bay; but within a few years he has been carried beyond Cape Cod, and has multiplied so abundantly, that the Boston market has now a full supply, without the necessity of importing from Newport and Providence. Black-fish, however, does not confine himself to rough bottoms; for he is also caught in the southern bays of Long-Island, and in the banks of the ocean off Sandy-hook.

He is considered by the New-Yorkers as a very fine fish for the table. The price is from eight to twelve cents a pound. He grows to the weight of ten or twelve pounds, and even more; but it is a fish of good size that equals two and three.

He may be kept for a long time in ponds or cars; and fed and even fatted there. When the cold of winter benumbs him, he refuses to eat any more, and a membrane is observed to form over the vent, and close it. He begins to regain appetite with the return of warmth in the spring. The blossoming of the dog-wood (cornus), early in April, is understood to denote the time of baiting black-fish. As soon as these flowers unfold, the fishermen proceed with

their hooks and lines to the favourite places. If there is no dogwood, a judgment is derived from the vegetation of the chesnut-tree (castanea). The season of biting is reckoned very favourable until the increasing warmth of the season brings food enough to fill their stomachs, and they thereupon afford less pastime to the sportsmen, and less profit to the professed fishermen. The people express this sentiment in these coarse rhymes:

> When chesnut leaves are as big as thumb-nail,
> Then bite black-fish without fail;
> But when chesnut leaves are long as a span,
> Then catch black-fish, if you can.

The common bait for black-fish is the soft clam or pisser (mya). The soldier crab or fiddler (ocypoda), will frequently tempt him when he refuses to taste the other. And he snaps very readily at the large binny worm of the salt-water beaches (nereis), when used on a line for him.

Some persons who live contiguous to the shores where are situated the rocks frequented by tautog, invite the fish there by baiting. By this is meant, the throwing overboard broken clams and crabs to induce the black-fish to renew their visits; and fine sport is procured.

Rocky shores and bottoms are the haunts of black-fish. Long experience is required to find all these places of resort. Nice observations on the land marks in different directions are requisite to enable a fishing party to anchor on the proper spot. When, for example, a certain rock and tree range one way, with a barn window appearing over a headland the other way, the boat lying at the point where two such lines intersect each other, is exactly over some famous rendezvous. To ensure success on such an expedition, it is proper to have a pilot along, well versed in all the local and minute knowledge. According to the number and distance of the rocks and reefs visited, will be the time consumed, from the duration of a few hours to a long summer's day. An opinion prevails that black-fish can hear very well; and, for fear of scaring them away, the greatest stillness is observed. He is a strong fish, and pulls well for one of his weight and size.

At some places black-fish bite best upon the flood. In others they are voracious during the ebb. Thunder ac-

companying a shower, is an indication that no more of them can be caught. The appearance of a porpus infallibly puts an end to the sport. Curious stories are told of fish in the wells and prisons, floating in their native element, having been found dead after sharp and repeated flashes of lightning. Dull weather, with an easterly wind, is generally the omen of ill luck.

The exploits performed in fishing for tautog, are recounted occasionally with remarkable glee, and they afford a never-failing theme of entertainment to those who are engaged in this sort of adventure. Though the hand-line is generally used, the rod is sometimes employed to great advantage. Black-fish is remarkable for retaining life a long time after he is taken out of water. He sometimes swims over even ground, and is caught in seines.

There are several varieties, all of which may be occasionally viewed at once on the fishmongers' stalls.

(b.) T. *fusca.* With bands and zones of a brown colour, and the whole complexion brown.

(c.) T. *rubens.* With clouds and shades of reddish hue, giving tints to the whole fish.

(d.) T. *alia.* With yet other mottles, clouds and marks.

2. TAUTOGA CHOGSET. *Bergall of New-York.* Chogset of the Mohegans.

This fish seldom grows more than seven or eight inches long; nor equals as many ounces in weight. Is found in all the waters frequented by black-fish. Lives on the same food, and is very troublesome to fishermen by nibbling away their bait. This pesters them the more, because the hooks for black-fish are too large for the mouths of the bergalls. The resemblance of the chogset to tautog is so striking, that he might be called a black-fish in miniature. It is a large bergall that weighs ten ounces; yet I have seen them heavier than sixteen.

Mouth rather small. Lips distinct and covering the teeth. When turned back, a grinning appearance is produced. Jaws furnished with a row of sharp, short, and separate teeth; and smaller ones appearing in the gums behind them. There are about sixteen teeth in the upper row, and twenty-eight in the lower; besides the irregular or scattering ones. Head smooth and fleshy. About seven-

teen of the dorsal rays have naked spinous points, and are ramentose between.

Lateral line armed upwards, and consisting of a succession of oblique oblong dots. Three ramentose spines before the anal fin. Tail broad, convex, or rather longest about the middle rays. Tongue white and smooth. Colour bluish, bordering on green. The green is plainest about the gill-covers, anal fin and ventrals. Sometimes the back faintly clouded, and variegated with orange specks. A neat little fish, and tenacious of life when exposed to the air; though less so than the black-fish. A triangular pavement of teeth in the throat below, and two oblong patches above, just before the gullet.

Rays, Br. 5. P. 15. V. 6. D. 28. A. 9. C. 15.

There is a remarkable variety of the chogsets, viz.

(b.) C. *fulva.* Yellow bergall. A reddish yellow over the whole surface is the distinguishing feature. This is by some conjectured to be owing to confinement in cars or wells of smacks; and in some degree to the coldness of the water in winter. Whether these suppositions be true or not, the fish appears perfectly well formed and healthy.

Sparus, or New-York Sheepshead. (Vide Fig. No. 2.)

The description and history of this extraordinary fish is contained in the following letter from Dr. Mitchill to Dr. George Shaw, of London:

"SIR,

"Well knowing your fame and zeal in science, I do myself the pleasure of addressing to you some particulars in the natural history of the *sheepshead*, a fish highly extolled in this part of North-America.

"SPARUS OVIS. *Sheepshead.* The form of the mouth and the smuttiness of the face have a distant resemblance to the countenance of the sheep. Thence comes the name by which it is usually distinguished.

"The sheepshead is the most esteemed of the New-York fishes, and sells for a higher price than any, excepting perhaps fresh salmon and trout. A dollar is frequently paid for an individual that will not weigh five pounds, and a dollar and an half for a heavier fish. Grows big enough

to reach fourteen or fifteen pounds. One that weighed four pounds and a half measured twenty inches in length, eight in depth, and three in thickness. Boiled sheepshead served up at a dinner is deemed a first rate dish.

" Teeth covered by the lips, which are large and distinct. Four incisors in each jaw; and two other teeth situated next to them, one on each side, that may be considered as canine. The former are straight; the latter rather turned inwards. Within and beyond these, two or three rows of round-topped grinders, making a bony pavement as it were inside of the mouth. No cirrhus or roughness of any kind on the head, neck, or snout. Lower jaw shorter than the upper.

" Nostrils double. Eyes large, vertical, brown, and connected by a prominent brow. Head united to the body without any proper neck. Gill-covers broad and smooth. Opening ample. From a scaly spot a little above the gill-aperture, proceeds a coloured and curved streak to the withers. A single dorsal fin, strong and spinous, lowering into a deep furrow the greater part of the course. The expanded tail measures six inches across, and is neatly concave, or almost lunulated. A scaly process near the insertion of the ventral fin. The lateral line almost corresponds with the arch of the back, and radiates prettily on the scales over which it passes.

" General colour of the sheepshead a white or obscure silvery, with a smutty daubing over the face and chin, a greenish tinge above the brow, and usually six or seven dark bands or zones of an inch or more in breadth, regularly slanting from back to belly. The latter a dull white, approaching in some places to cream-colour.

" Scales large, horny, distinguished by radiated and concentric lines, and somewhat like a square, rounded a little at the corners. They are deeply inserted into the skin; adhere with remarkable firmness; and when they separate, there is discoverable on the edges of the skin which enclosed them, a sort of tarnished argentine, or brightish leaden hue. Rays of all the fins coarse. Pectorals long and pointed. Tongue white and smooth.

" The intestines of the individual which I last dissected were lengthy, convoluted, and filled with the fragments of several sorts of crabs. The swimming bladder capacious

and thick. The peritoneum, on opening the abdomen, is blackish. Two patches of teeth in the upper part of the throat; and two smaller corresponding patches on the lower part, a little in front of the entrance to the gullet. But all of these are very inferior in strength and size to those of the mouth.

"This noble fish visits the neighbourhood of Long-Island annually. He finds in the recesses and inlets there, a plenty of the crabs, muscles, and clams, on which he loves to feed. He confines himself strictly to the salt-water, never having been seen in the fresh rivers. His term of continuance is only during the warmest season, that is, from the beginning of June to the end of September. He then departs to the unknown depths of the ocean. He swims in shoals, and is sometimes surrounded in great numbers by the seine. It is said that several hundreds have been taken at a single haul with a long sweeping net, near Raynortown, Babylon, and Fire-Island. They even tell of a thousand brought to land at a draught. He also bites at the hook, and the fishermen not unfrequently catch several in succession. The outfit of a sheepsheading party is always an occasion of considerable parade and of high expectation, as I have often experienced. Whenever a sheepshead is brought on board the boat, more joy is manifested than in the possession of any other kind of fish. The sportsmen view the exercise so much above common fishing, that the capture of the sheepshead is the most desirable combination of luck with skill; and the feats of hooking and pulling him in, furnish copious materials for the most pleasing and hyperbolical stories. The sheepshead is a very strong fish, and the hooks and lines are stout in proportion; yet he frequently breaks them and makes his escape. Sheepshead have often been taken with such fishing tackle fast in their jaws. When the line or hook gives way, the accident makes a serious impression upon the company. As the possession of the sheepshead is a grand prize, so his escape is felt as a distressing loss. I knew an ancient fisherman who used to record in a book the time and place of every sheepshead he had catched. The sheepshead is sometimes speared by torch light in the wide and shallow bays of Queen's county and Suffolk.

"The rays of the fins in this fish, if I have counted

right, are as follows: in the bronchial, four; pectoral, six; ventral, six; dorsal, twenty-four; anal, thirteen; and caudal, nineteen.

"The places where he is found in the greatest abundance are about forty miles from the city. He soon dies after being removed from his element, and in such sultry weather quickly spoils after death. They therefore remove his entrails, lay him in the water of the coldest springs and brooks, and transport him to market during the coolness of night with all possible speed, in waggons. Yet, after all, he is too frequently stale or tainted before dinner-time, and thrown away as unfit to eat. When ice-houses shall be established near the fishing places, and along the roads, sheepshead will be brought in perfection at New-York. It is to be regretted that these precious fish corrupt so frequently for want of ice.

"That you may form a more satisfactory opinion on this subject, I herewith forward to you preparations of the upper and lower maxillary bones, with their several sets of teeth; and of the fourfold armament of teeth with which the throat is provided. I also send you a portion of the spine, that you may examine the figure of the vertebræ, and the manner of their connection with the rays of the dorsal fin.

"Be pleased to accept my hearty acknowledgment of the satisfaction and instruction I have derived from your General Zoology, and Naturalist's Miscellany; and to receive the present communication as a mark of my particular respect."

Clupea, or New-York Herring. Alewife. (Fig. 3.)

CLUPEA VERNALIS. *Alewife, or Spring Herring*, comes with the shad to New-York in the latter part of March and the first of April, annually. Is about twelve inches long, and three deep. Called *alewife*, probably from the French *alevin*, the young fish rejected as being under size.

Lower jaw longer than the upper, and the upper slightly bifid. Head rather small, and inclining to a pale brassy-yellow. Eyes large, and yellowish-white. Back bluish-green, with tints of purple occasionally. Lateral line very faint. A light brassy stripe, about an inch wide, though

not nicely defined, extending between the upper part of the gill-opening and the tail, with sometimes traces of four or five cloudy lines. The rest of the sides and belly bright as alloyed silver.

Belly strongly serrated, particularly between the abdominal fins and the vent. The anal fin has sometimes seventeen rays, though the more usual number is nineteen.

Behind the branchial opening, and on the thorax, a scaly plate, and a dark spot. A row of four or five other lateral spots sometimes to be counted on different individuals of the same parcel or draught. Tail deeply forked. Scales very easily deciduous. Mouth toothless. Gill-openings ample.

A row of cuspidated marks, caused by internal bones on each side of the belly, arising from the carinated edge, and lapping on as it were with the ribs. Is one of nine or ten species of clupea that visits New-York.

Rays, Br. 7. P. 15. V. 9. D. 17. A. 19. C. 21.

I transfer from the first volume of the collections of the New-York Historical Society, p. 41—43, to this place, my letter on certain fishes of the Hudson, which my excellent friend Samuel Miller, D. D was pleased to annex to the anniversary discourse pronounced by him in September, 1809. It contains some information concerning the fish we call herring.

"*Albany, 4th March*, 1810.

"Concerning the frequency of salmon in the river Cahohatatèa, or North-river, when first visited by the navigator Hudson, I have my doubts as to its correctness. That fish has indeed been taken in this river, and even in the vicinity of Albany; but this is a rare occurrence, and the individuals of this kind that have been caught are solitary, and not the gregarious salmons swimming in shoals. I have conversed with several persons here who have seen a few of these lonesome and straggling fishes, from time to time, as they have been brought to market.

"I cannot learn that there is any record or tradition of their having ever frequented our river, after the manner of the Connecticut, the Kennebec, and other streams on the continent. Salmons love clear and limpid water, as do all the species of the trout family to which they belong. And

I should question much whether the ooze and mud of the Cahohatatèa was so agreeable to them as the sandy bottoms of the more precipitous and rapid rivers. Besides, you well know that our river is properly but an estuary as far as the outlet of the Mohawk, and the strata of shistic rocks which cross it above the junction of that river, are generally more shallow than perhaps the salmon would like. And further, the Dutch word *salm*, or *salmpie*, commonly in use to signify *salmon*, (spelled sometimes *zalm*, and *zalmpie*) means also in ordinary and loose conversation and composition, *trout*.

" There are still other considerations unfavourable to the abundance of salmon in our river, as you quote from Hudson's journal. They are these, which relate to the *alewife*, the *shad*, and the *sturgeon*, the annual visitants of this stream at Albany and higher. Whatever may be the opinions of speculative men as to the governing principle of these creatures, whether it be instinct or reason, the fact nevertheless is, that they select very proper places to deposit their spawn, and perpetuate their race. In our river these three species of fish had each an appropriate spot for breeding. The grand rendezvous for the herrings was the Saratoga lake, into which they entered by its outlet, yet called fish creek. The obstruction of this passage by dams and artificial impediments, has turned the herrings from their favourite haunt. The inhabitants of the neighbouring region have thereby been deprived of their yearly treat of herrings. But more than this, the herrings thus dispossessed and discouraged, have become more rare in the river, and are deserting it in proportion to the want of accommodation. It is reported that the course of the herrings was more especially on the west side of the river.

" The shad travelled along the eastern shore. Their chief place of resort was the basin at the foot of Fort Edward falls.

" No particular path in the river was selected by the sturgeons. They seem to have swum at large, as they do at present. But they assembled for the propagation of their kind at the pool or cove near the Eisenberg, about two miles above Waterford. The roes or eggs of the sturgeon are exceedingly numerous, amounting to a large mass of spawn. You recollect that the Russian cavear is made of

them. Other fishes are fond of feeding on them. They eat the spawn with remarkable voracity. It is one of the most alluring baits that fishermen can use. The abundance of this exquisite food at the breeding season is supposed to be the principal inducement for the *basse* or *rockfish* to follow the sturgeons to their place of deposit. The disturbance the sturgeons have experienced has diminished their numbers exceedingly, and the basse has become proportionally rare.

"Now, with all this information relative to the several species of fishes which have frequented the Hudson since the possession of its banks by European emigrants, there are no regular notices of *salmons*. Neither a swimming course nor a breeding place has been detected. It is therefore a fair presumption that these fishes never found within its waters sufficient inducement to visit them in great numbers, or at regular times; but that those which have been taken are merely strays and wanderers."

We are informed upon very good authority, that this very species of fish used to spawn in Crumpond, a source of the Peekskill, and in lake Otsego, at the head of the Susquehannah. Thither the herrings went yearly to breed, by the way of the Chesapeake and the Hudson. And they have discontinued their visits only in consequence of being excluded by the mill-dams erected across the stream.

The like impediments have shut them out of many places on Connecticut river, which they formerly frequented.

During the last session of the New-York Legislature at Albany, in 1810, when I was last a representative from the city in the house of Assembly, there was a strong exertion made to procure the enactment of a statute for facilitating the navigation of the Hudson between the villages of Troy and Waterford, by constructing a dam with a lock across the river there. I made strenuous opposition to the bill that had been introduced for the purpose. The grounds of my objection were various. But one upon which I considered myself firmly footed, was the injury which would be wrought to the fisheries in the river by such an obstruction. I contended that by depriving them of access to the places they loved to frequent for the pur-

pose of perpetuating their race, there would be danger of driving them from the river altogether; and I called upon the delegates from Richmond and King's counties near the ocean, to the members from Washington and Saratoga above, to unite in rejecting the preposterous scheme. In the course of my speech I observed, "that I considered myself the advocate of the fish; I begged the house to view me as the counsel for their silent tribes; like Saint Antonio, I felt a deep concern for their welfare; and I entreated the members to oppose, by a unanimous vote, the adoption of the meditated measure, as big with ruin to the innocent inhabitants of the floods." The project was negatived by a very large majority.

The life of the herring has never been thought important enough to be put under the protection of the law in New-York. Even in the last edition of our statutes, under the revision of Van Ness and Woodworth, no notice is taken of these fish. This may perhaps indicate the diminution of their numbers, and the smallness of the fishery. It is scarcely a public object. In the act of April 5th, 1813, "relative to the fishery in certain waters," salmon, trout, shad, oysters, suckers, pike, and pickerel are mentioned; but the name of herring does not occur. And the "act declaring certain waters to be public high-ways," &c. passed April 2, 1813, is equally silent of these fish. In the regulation of set-nets in the Hudson river, between Troy and New-York, and of the buoys and stakes connected with them, the intention of the legislature seems rather to have been, the prevention and removal of obstructions than the preservation of any species of fish.

The only New-York clupea with a smooth belly, (that is, with an abdomen carinated without being serrated) is a species which our people call the *shadine*. At least I have not seen any other. That fish I have described as follows:

CLUPEA SADINA. *Shadine.* An elegant clupea, with neither spots nor stripes on its back or sides. Mouth and tongue smooth. Back beautifully variegated with green and blue. Lateral line straight. Sides silvery white considerably above that line, and below it quite down to the belly. The white reflects vividly green, red, and other splendid hues. Scales fall off very readily. Body has a

remarkably slender, taper, and delicate appearance. Abdomen not at all serrated, but quite even. The rays are, Br. 7. P. 16. V. 9. A. 15. D. 18. C. 19.

I have examined the Nova-Scotia herring as it is brought to our market. It is an even-bellied fish, and different from the alewife; but whether it is the preceding species, or the European herring, I am unable to determine. The species I call clupea sadina, is reckoned a better fish than the alewife, and is said to be very fine to pickle and smoke; but the number is not considerable enough in the New-York waters to allow any great business to be made of it.

With pleasure I add the following notes from Mr. Giraud's remarks on the American alewife or herring. They are the result of minute and careful research:

"This fish, known in New-England by the name of *alewife*, is not the herring of the fisheries carried on from the coasts of Europe. It is of not near so good a quality; is broader and longer; and holds a middle rank between the shad and herring. It is a *clupea* which has not been described, as it would seem. It has therefore been denominated by some clupea serrata. In the season of its appearance on the coast, which is the same with that of the shad, it ascends the rivers and streams in great numbers. One might suppose it was forced to seek a shelter in these various openings, to escape the greediness of the codfish that pursue it.

"The same importance is not attached to the catching of this fish here, as the herring business along the coasts of England. This proves it is not the same; that it wants the qualities which give importance to the herring; and the name has been transferred to it from a very slight resemblance. This American herring is dry, full of bones, flatter, and not near so white.

"It seldom happens that the fishermen go to the sea, or even to the river mouths to take alewives. They are catched in nets, and often by hand, in the different creeks to which they resort. It never bites at the hook. It is preserved in pickle. It furnishes an article of food to the poor. They send it to the West-Indies, where it is bought for the slaves. The amount is inconsiderable, and never makes up a whole cargo, and is only thrown in to make up an assortment.

" A remark may be made upon this fish, which applies to all the others which frequent the coasts of New-England, that the number has exceedingly diminished since the beginning of the last century. The proprietors of land then frequently used them for manure, which would be very difficult at present.

" There is another discriminating circumstance. The European herring is never found in the rivers and fresh waters. It is exactly the reverse with the American herring or alewife, which stems the currents to their sources, and penetrates the ponds and lakes of fresh water, two hundred miles from the ocean, for the purpose of spawning."

Mr. John Gilpin has published, in the second volume of the American Philosophical Transactions, a memoir on the annual passage of herrings. In it he endeavours to prove that the breeding-place of these fishes is in the rivers of North-America; and that they perform a great yearly circuit in the Atlantic ocean. During this great migration they visit seas and coasts in a regular succession, governed by the warmth of the water and the convenience of subsistence and breeding. The ingenious author takes it for granted, that the spring herring of North-America, and the migrating herring of Europe, are the same sort of fish. This however is not the fact. They are totally distinct. Mr. Gilpin's hypothesis, of course, is entirely overturned. These American herrings do indeed, as he says, " arrive in Georgia and Carolina the latter end of January, and in Virginia in February; and coasting from thence eastward to New-England, they divide and go into all the bays, rivers, creeks, and even small streams of water, in amazing quantities, and continue spawning in the fresh water until the latter end of April, when the old fish return to the sea, where they change their latitudes by a northward direction, and arrive at Newfoundland in May." But all these facts apply to a species peculiar to our own regions, and as much a stranger to European waters as their *clupea harengus* is to those of New-York and the adjoining states.

INTELLIGENCE.

Diseases of the City of New-York, and Bills of Mortality, September 15, 1814.

A PERFECT acquaintance with the atmospheric constitution in each season of the year, could it be easily obtained from unerring signs, and be compared with incidental alterations or variableness, would form one of the most useful guides in the judgment of annual diseases. With it, we not only could define them, and infer proper modes of treatment and cure, but we might predict what predisposition or morbid effects on the human constitution are likely to take place at an approaching period of time. It was with a view to obtain such information that Hippocrates had earnestly recommended the observation of seasons: "*Quicumque artem medicam integrè adsequi vult, primum quidem temporum anni rationem habere debet.*"*

One of the most important characters of seasons in relation to disease, is their alteration of temperature or of moisture. According to these the human body, which is no less influenced than the vegetable part of the creation, is equally injured by prolongation of heat in the fall and winter, as by great moisture in the spring and summer, and *vice versâ*. With want or excess of necessary qualities to the ambient air in the succeeding periods of the year, the growth and preservation of animated beings are endangered, and disease is formed; such an inverted order of seasons was also noticed by Hippocrates: "*In anno autem aliquandò hyems viget maximè, aliquandò ver, modò æstas, modò autumnus.*"†

While the operation of the above causes is so obvious to physiological readers, we are to observe, that during the last spring and the summer to this day, the frequency of rains has been remarkable in this part of the continent, by its recurrence at short and regular periods, without an exces-

* De Aere, locis et aquis, § 1. † De Natura hominis, § 16.

sive abundance, except in a few districts, where the declivity of the soils and rivers has occasioned destructive freshets. From that circumstance alone, however, we would not pretend to prognosticate, that epidemical diseases, arising from continual moisture, are to take place in this fall; for, by the great authority which every person may bring to the test of experience and facts, we are again warned not to trace reigning epidemics to atmospheric changes and alterations, unless they are very great and unusual; "*mutationes temporum pariunt morbos, præsertim maximæ.*"* We are besides informed, that in the year 1797, there fell in France, during six months, no less than 32 inches $9\frac{2}{10}$ lines of rain, that is, 25 inches more than in the following year, and in a far greater proportion than it is usually observed; there was, however, no more sickness than could be naturally expected, because the rains were moderate and constant.†

Having thus laid down those rules or data which must be deemed indispensable in judging annual diseases, it is gratifying to observe what an uninterrupted state of health all classes of our large populations have enjoyed during the preceding season; the same has continued to this approaching equinoctial period, while our bills of mortality have been lessened in proportion to the effects of summer intestinal and febrile complaints.

In reference, however, to our previous statement, we have noticed a constitutional disposition to intermitting fevers, especially of the quotidian type. In their first stage they may be mistaken for bilious remitting, the paroxysms of which recur with little or no ague at all; the tongue is parched and furred. In many instances they become double-tertian; but, after well supported evacuation, they yield to the liberal exhibition of cinchona.

Chronic rheumatism, perhaps to be traced to night air and atmospheric moisture, is evidently existing among female adults, while the excitement and agitation of a state of war no doubt protect the male part of society against the influence of seasons. We sincerely hope that no domestic calamity of disease nor mortality may further cause regret or require investigation.

* Lib. de Humor. § 5. † Vide Semeiotique de Broussonet, p. 26

BILLS OF MORTALITY, *as observed and reported by Dr.* ISAAC BALL, *M. D. Assistant to the Board of Health, New-York. Commencing April* 2, *and ending July* 2, 1814.

		Consumption.	Various diseases.	Total.
April 2 to	9	14	21	35
	16	13	29	42
	23	12	26	38
	30	10	26	36
May	7	13	19	32
	14	12	30	42
	21	12	23	35
	28	4	23	27
June	4	9	13	22
	11	6	14	20
	18	12	15	27
	25	10	29	39
July	2	8	22	30
		135	290	425

Military Surgery.

The art of curing diseases and wounds by manual aid, acknowledges the same elements, and requires the same studies, whether it is practised amidst the opulence of a city, and the peaceful retreat of the country, or whether it dispenses its benefits in the centre of camps and the horror of battles. The science of the surgeon therefore is invariable. The military surgeon applies that science to the individuals and the circumstances of campaigns and armies.

The French nation has for twenty years been so constantly engaged in war, that the medical staff has been greatly methodized and improved. The reason for making it skilful and alert was a good one; for the soldiers and officers marched to battle with the greater confidence, when they knew that the officers and ministers of health would

immediately attend to them, in case of exhaustion or wounds. It is a discouraging reflection to a fighting man, that after being pierced by a bayonet or a ball, he shall be left to perish on the field through neglect, or in his quarters by unskilfulness.

The organization of the new medical staff in the French armies has been minute and precise. It has been elaborated with great care. The system is worthy of profound consideration. A martial people ought to have faithful and well-accoutred surgeons. Its wars will be waged with greater force and spirit when it is known that, besides their numbers and their qualifications, they are in a condition to perform prompt and efficient service.

We give the arrangement as it stood in the fighting days of Bonaparte.

To each battalion of a regiment of infantry, were assigned two surgeons. The like number was allotted to each squadron of cavalry and artillery. Thus a regiment of four or five battalions has eight or ten surgeons.

Their senior is called the surgeon-major. He is always attached to the first battalion or squadron, which has custody of the regimental colours.

The other battalions have each an assistant surgeon-major; and there are as many deputy-assistants as there are battalions or squadrons.

The law requires that each surgeon-major shall be a doctor of physic or surgery in one of the faculties of the empire. The same qualification is required for the assistants. But the events of the wars have in some cases rendered the observance of the rule impracticable.

The regimental surgeons are under the orders of the colonel, major, and commandants of the battalions and squadrons to which they are attached. The surgeon-major is the inspector of his colleagues, and in all serious matters their adviser.

The duty of the senior surgeon in a regiment is to watch over the health of the cantonment or barracks, and to conduct the treatment of the lighter diseases, such as itches, claps, and light wounds. It is his duty to visit the apartments daily, that he may order them to be kept conformably to the principles of Hygiene, and that he may ascertain the number of sick and disabled men for whom regi-

men is prescribed. He makes to his superior a report of all that he has learned during his visit.

In garrison, the surgeon-major, or at least an assistant, must go daily to the military hospital, to visit the sick of his regiment. He thus determines satisfactorily whether the soldier has received the attentions and comforts to which he is entitled. The sight of such a person, and the sound of his voice as he utters words of admonition or consolation, sooth the sufferings of the patient, who views him as a protector, and in some degree as a member of his family. Soldiers are usually grateful. A surgeon may easily cause himself to be beloved by them. On a recent occasion, a wounded surgeon-major was carried more than forty leagues in the arms of the grenadiers of his regiment!

Surgeons accompany their regiment wherever it goes. They even follow it to combat, and there proffer the first help to the wounded. And if the wound is serious enough to authorize the removal of a man from his standard, they take measures for carrying him off.

Each regiment is supplied with a case of amputating instruments. There is a second containing the usual external and internal remedies, whether for field or chamber exhibition. In this are also linen for dressing, lint, bandages, and the other implements for this kind of service.

In the great cities of the empire, and in the frontier towns, where large garrisons are kept in time of peace, there are stationary and permanent military hospitals. In these every part of the health-service is under the direction of a principal. Consequently there is a surgeon-major, and one or more assistant majors, according to the number of the sick. Some of these hospitals, as that of Val-de-grace, at Paris, have a surgeon-major as the head of the institution, and under his orders, surgeon-majors charged with special functions; and as many assistants as the business requires. Independent of the surgeon-major and his assistants, the duties of a military hospital require a number of surgeons and assistants corresponding to that of the patients. The usual computations in such an establishment is a surgeon of this class to twenty-five sick. Hence an establishment that contains five hundred men, ought to have twenty deputy-assistants, two assistant majors, and a surgeon-major.

The health-officers attached to the military hospitals can only be detached by order of the war minister.

In time of war, when the army is embodied, independent of hospital and regimental surgeons, military surgery has the aid of other individuals, whose distribution and function are next to be described.

An inspector-general of military health has the direction of the surgical department of a large army. This inspector solely takes the title of chief surgeon of the army, and resides at head-quarters, where his business with the major-general, the quarter-master-general, and the commissary-general require him to be. From this central point he directs and superintends the extensive concern which is confided to him. If the army is distributed into particular corps composed of several divisions, and formed into a small army to act separately, the chirurgical business is delegated to a principal surgeon, who in his turn receives his orders and instructions from the surgeon in chief.

Each military division, having particular movements to perform, and after a series of movements getting separated from the main body of the army to which it belongs, ought to be accompanied by a complete carriage for the wounded and disabled, called the *ambulance*. This machine is to be considered in two important relations; first, as to the men that belong to it; and, secondly, as to its structure and furniture. The persons attached to it are composed of a surgeon-major, an assistant surgeon-major, and four, six, or eight deputy-assistants, according to the amount of force of the division. This surgeon-major receives his orders immediately from the principal surgeon of that body of the army to which the division belongs.

To the ambulance (or carriage for wounded men) belonging to the division, are attached a suitable number of attendants, whose business it is to assist infirm and wounded men. These attendants are soldiers set apart to remove the wounded from the field of battle, and to afford them necessary assistance after their reception into the travelling hospital.

Each division-ambulance is furnished with a case of amputating and trepanning instruments; and every health-officer has his particular case of instruments. Each ambulance-carriage contains dressing-linen, bandages, lint, pins,

splints, medicines, wine, brandy, light food for the nourishment of the wounded, and half-furniture for bedding. These carriages should be constructed upon the plan directed by the inspector-general Larrey, in his memoirs of military surgery. They are light, strong, capable of travelling all roads, and exceedingly convenient for transporting and delivering the wounded from one place to another.

Thus every section of an army has a number of surgeons proportioned to its force. The principal surgeon ought to have with him a quarter-master, and one, two, or three sets of *ambulances*. These supplementary vehicles are useful on the day of battle, and convenient to perform the service of the hospitals which an army is obliged to establish on its march, after fighting is done. They are also good to convey numerous bodies of wounded to the established hospitals, when they are remote from the army.

The surgeon in chief of the great army, when the health-department is well organized, ought to have near him a corps of surgeons, to form his *battle-surgery*, as M. Percy calls it. This array consists of surgeon-majors, assistant surgeon-majors, and deputy-assistant surgeon-majors, formed into brigades; that is to say, that each surgeon-major has under his orders an assistant and four deputies. On grand occasions, like those of Eylau and Friedland, the battle-surgery ought to be composed of a hundred individuals at least.

On the day of a general action, the surgeon in chief, at the head of this corps, animated with zeal and valour, takes a place in the centre of the army. He establishes for each wing an ambulance that is commodious and out of the reach of cannon. The third and the most considerable is formed in the face of the centre of the army, where the chief surgeon has every thing prepared for the reception of the wounded.

Each ambulance has surgeons allotted to take care of it, and be ready to receive the wounded. All the surgical companies attached to the armies are at their respective posts under the superintendence of the principal surgeon.

As soon as the battle begins, the surgeon in chief of the army, at the head of his fellow-labourers, all mounted on horses, with their instruments secured by shoulder belts, and with bandages, linen, and lint in the holsters of their

pistols, proceed to the field of battle for the purpose of succouring the wounded. When circumstances permit, the carriages of *battle-surgery* invented by Percy, and so happily introduced on several occasions, are manned by the surgeons and brought forward. In these they can ride more conveniently than on horseback, and be more swiftly conveyed to the places where the wounded require their help.

As fast as the wounded are relieved, or the first dressings applied, they are removed from more imminent exposure by the soldiers of the ambulance, who convey them by carriages, on hand-barrows, and in their arms, to the nearest ambulance, for immediate succour.

When the battle is done, the surgeon in chief collects all his ambulances together, and there, with all his co-operators, finishes the operations and dressings. It has been remarked that the skill, zeal, and activity of PERCY and LARREY, are personally displayed on these occasions. Notwithstanding their elevated rank and situation, they are actually present, and labour faithfully with their own hands.

These important duties having been performed, the wounded, accompanied by surgeons of all degrees, are taken from the theatre of action to the places assigned for their reception and cure. Such establishments are called *travelling hospitals*, because they are capable, according to the exigency of events, of being moved from one situation to another.

On the opening of a campaign there should be formed a battalion of *infirmary-men*, or *ambulance soldiers*, for the express purpose of following the surgeons to battle, of assisting the wounded, and of doing what is necessary for the sick in the hospitals. Corps of these persons have been formed for the armies on the Rhine and in Spain. They have a particular uniform. They are subjected to military discipline; and the service has been very much improved by their introduction.

[This article has been translated for the Medical Repository, from the fifth volume of the *Dictionnaire des Sciences Médicales*, now publishing in Paris. The principal physicians and surgeons of France are engaged in contributing materials to it. It seems to us they are labouring to render it a *professional* Encyclopædia; and they have really made it a rich body of learning and instruction.]

Venomous Qualities of the WATER-HEMLOCK, *or Cicuta maculata, an indigenous Plant of North-America.*

I. *Letter from Dr. William Ely, of Pleasant Valley, Dutchess County, New-York, to Dr. Mitchill, dated March* 28, 1814.

I send you an account of a melancholy occurrence which happened in our village last Saturday night, likewise some of the fatal root which occasioned it. As three little boys were returning from school, they went into a meadow for the purpose of getting the calamus aromaticus; but by mistake they got the root which I send you. I suppose it to be the helleborus albus. Two of them were brothers; one about eight, and the other ten years of age, who both died in about one hour from the time they ate it, and within fifteen minutes from the time they were first attacked. I was called to them within ten minutes from the time they were taken with convulsions, and pronounced it poison. At this time no one knew what it was. They both expired in a few minutes, even before I administered any medicines. By this time I was called in great haste to the other, who was but a few rods off. I found he had just puked. I gave a gentle emetic, and after it had operated, castor oil. He soon recovered, had no convulsions, and he then gave us an account of their getting the root. The next morning he was taken to the place, and showed the spot where they dug it, and where they found some considerable more. He said that he ate a small piece, not more than the end of his little finger; but the other two ate much more. There are different opinions in this village with respect to the true name of this noxious root. I wish your opinion on the subject, together with a true description of the top, flower, &c. for the benefit of the public.

I must farther observe to you, that the two who died discharged much blood and froth from the mouth and nose. Their eyes were fixed as it were immoveable in their sockets; the pupil much dilated, and a very rapid motion of the eye-lids. The abdomen was much tumefied, and there was some purging.

II. The roots sent by Dr. Ely were planted in the garden of the New-York Hospital, where they vegetated

thriftily, and produced both flowers and fruit. Specimens were exhibited by Dr. Mitchill to his class, while he was engaged in the botanical part of his course on natural history. The plant was examined by every person who had curiosity to view it.

Some doubts however remained as to its *scientific* character. It belongs to the umbelliferous section of the *pentandria digynia.* To ascertain its systematic name, a sample was forwarded to Dr. H. Muhlenberg; and from him the following answer was received:

III. *Letter dated Lancaster, June 20, 1814, from Henry Muhlenberg, D. D. to Dr. Mitchill.*

DEAR SIR,

I thank you sincerely for your excellent letter, and for the specimen enclosed. I had received the plant before from my late friend Dr. Brickell, of Savannah, as cicuta venenata, and from Harmony, in West-Pennsylvania, as a very dangerous plant, which had killed several people that had ate it instead of angelica. Long ago it was sent to me by the Indian name of *utcum.* I have cultivated from all these places the plant in my garden, but can find no difference whatsoever from the *cicuta maculata* Linnæi, as it grows very common in all Pennsylvania. It flowers from the beginning of June to about haymaking. The root has about five fingers. The seed is strong-scented and hardly poisonous. Plunkenet has a good figure. Plunk. 76. 1. The base of the stem, and often of the pedicelli umbellulæ, are spotted. I think Michaux describes it by the name of *ligusticum actaeifolium;* but it is no doubt the cicuta maculata of Linnæus, by his herbarium examined. I have reason to believe the poisonous quality of the root is changed by cultivation in a dry soil.

Remarks on the Medicinal Qualities of PRUNUS MARITIMA.*
By Dr. Aaron C. Willey, of Block-Island.

Various succedanea have, by different persons, been suggested for the cinchona, or Peruvian bark; but none seem

* Prunus Sphærocarpa. *(Beach Plum.) Mich.*

to have gained sufficient credit to supersede this production of the hills of Quito. In the present embarrassed state of our commerce, such a substitute would certainly be a desirable object. It would free us from the difficulties which attend the procuring of this drug, and be the means of saving a considerable expense to the country. I have made a number of experiments upon the indigenous vegetables of this place, in order to detect, if possible, one that would answer the purpose of this celebrated article of the materia medica. I am happy to state that the result of my inquiries has been the discovery of a medicinal substance, which, I believe, has as high claims to a substitute as any article that has as yet been offered to the public. This is the root of the beach plum (prunus maritima.)

The part in which the efficacy resides is the cortical portion. When pulverized, it bears a great resemblance to the pale bark. The chief difference consists in its being more coarse and harsh to the feel. I have never been able to reduce it to that floury and impalpable state in which we find the powdered cinchona.

In gathering the roots of the beach plum, I commonly reject those of the youngest and oldest growth; not because they do not contain any virtues, but that in these the virtues appear to be weaker than in the others. Another reason why I reject the young roots, is their not being so easily pulverized.

The most eligible season for taking it from the ground, is any time between the falling of the leaves in autumn, and the ascent of the sap in spring. At this time of the year it is, in my opinion, much the most powerful. After the sap begins to circulate it is impossible to reduce the root to a pulverulent form, although long dried by as strong a heat as the substance will bear without being scorched.

It may be taken from the ground and prepared fit for use in the space of two hours.

I have employed this vegetable in various kinds of debility, and find it to answer an excellent purpose. Indeed, I have not perceived any essential difference from the bark of Peru. But what has completely established its merits in my mind, is its efficacy in the *typhus mitior*, or *febris inirritativa* of Darwin. In this disease I have had an opportunity of giving it a fair and impartial trial. Its appearance

and sensible qualities being so similar to the real bark, I have had no difficulty in passing it upon both patients and nurses for such, and thereby avoiding the encounter of fears and prejudices which frequently perplex the physician whenever he proposes a new remedy.

The manner in which I exhibit this drug is in decoction, or in substance, as circumstances seem to require. I sometimes use it in tincture, prepared in the same manner as the *tinctura corticis peruviani*.

I have had no opportunity of trying this root in the intermittent fever, a disease calculated to ascertain the power of tonic remedies. I have, however, strong reasons to believe that it will prove efficacious. I would therefore, earnestly recommend it to the attention of those physicians who reside in places where this fever occurs.

Varicose Veins.

Our colleague, Dr. Akerly, Hospital Surgeon United States Army, has followed the method of Mr. Frere in applying a ligature to the saphena vein, and removing it shortly afterwards, to cure varicose veins which he has met with among the soldiers. In four several instances he has performed the operation on different subjects, but the result does not appear to be so favourable as we have been led to expect. The patients however did not labour under the most favourable circumstances to effect a cure, and as two of them are still under his care, we reserve a detail of the cases for future consideration, and further observation.

A mal-formed Fœtus.

The following account was communicated to the editor of the Raleigh Star, N. C. October 22, 1813, by Dr. Telfair, of Greenville, Pitt county, in a letter of the 6th ult.

Mrs. ——— was delivered of a female infant of the following description:—The length from the apex of the

head to the inferior lateral extremities, is one and a half foot; two heads, with their appropriate necks and shoulders, with four arms perfectly formed, constitute the superior part of the body, as far as the ensiform cartilage; here it becomes single and apparently natural, except that the abdominal viscera terminate in an anus, turned very much inward for the purpose of receiving a central thigh, &c. which seemed to have its attachment in the articulation of the os coccygis. This supernumerary member was pretty well formed until it arrived within an inch of the ankle, when it became abruptly bent interiorly, terminating in a club foot, with six small toes in their usual positions, with a double one on the centre of the instep, rather towards their insertion. This case, I am happy to observe, has terminated favourably, and the person restored to her usual health. Mrs. —— had eight well formed children previous to this, with no unusual symptom marking her labour.

Weight of the child, 15lbs.
Two heads,
Four superior extremities,
Three inferior do.
Seven toes on club foot.

Literary Notices.

The Medical Works of Edward Miller, M. D. late Professor of Physic in the University of New-York, and Resident Physician for the City of New-York. Collected and accompanied with a Biographical Sketch of the Author, by Samuel Miller, D. D. Professor of Ecclesiastical History, &c. *New-York.* Collins & Co. 1814.

Of this useful work we would have thought it our duty to present our readers with an analytic review, was it not composed in a great measure of the original matter interspersed in the preceding volumes of the Medical Repository, of which the deceased author has been, during fifteen years, a co-editor and proprietor. The biographical sketch affixed to the collection claims a distinguished notice among the productions that adorn

medical literature. But we could not, with equal justice to the whole work, point out one or more extracts, and we much less feel disposed to exercise any kind of criticism of this performance which brotherly affection has thus consecrated to the memory of our friend and colleague. Suffice it to say, in relation to the form of the collection, that the reverend author has thought proper to inscribe every essay or memoir to some eminent medical character and friend of the deceased, with an appropriate address to each of them. We earnestly recommend this book to the faculty for the edification of its members, to the students of medicine for their instruction, and to all friends of moral philosophy as a lasting tribute of gratitude to virtue and useful talents.

Pharmacopœia Chirurgica in usum Nosocomii Novi-Eboracensis: being an Account of the Applications and Formulæ of the Remedies employed in the Clinical Practice of the Surgical Department of the New-York Hospital. By Valentine Seaman, M. D. Lecturer on Clinical Surgery in the New-York Hospital," &c. 12mo. pp. 47. *New-York.* Samuel Wood. 1811.

We are informed that this remarkably condensed compendium was printed at the expense of the students *attending the surgical wards*, for their particular benefit and convenience. Probably with the same motive it has been bound with a blank sheet to each page, on which additions and notes may at any time find their place. It is divided into *external applications* and *internal remedies*. The first are *dry*, *wet*, *wet-unctuous*, and *unctuous*. Figures of bandages, compresses, and splints are represented by small plain cuts. The second part mentions *decoctions*, *infusions*, *mixtures*, *pills*, *powders*, *salts*, *solutions*, *tinctures*, and *waters*. Each respective title has a few appropriate formulæ.

In hospitals where the objects of attainable cure or relief are numerous and incessantly renewed, it is of the utmost importance to adopt simple, uniform, economical, but effectual means of practice. The subordinate officers, resident apothecary, physician and surgeon are thereby better enabled to discharge their respective trusts; and in case of emergency may well replace the attending physician and

surgeon. In this point of view we think that a well classed and arranged *collection* of prescriptions or *receipts* is praiseworthy, and might, with some *alteration*, become a model for other hospitals. But we apprehend that, like many other abridged elementary works, pocket dictionaries, *vademecums*, &c. this is apt to render instruction a short and easy business, as limited as the pages that contain it; and, with all, exposing professional beginners to too much confidence in the sufficiency of their acquirements.

Description of the great GALLAPAGO-TORTOISE. *From Dr. Mitchill's Lectures on Natural History.*

About the middle of July, 1814, the ship Essex Junior, Lieutenant Downes, of the U. S. Navy, arrived in New-York. He had been on a cruise, by order of government, along the coast of Brazil, and round Terra del Fuego, and off the land of Chili and Peru, in quest of British traders and whale-men. He served under commodore David Porter, of the frigate Essex, a vessel of war which had almost broken up the enemy's navigation and commerce, in the tract of ocean lying between Cape Horn and the Gallapagos Islands.

After visiting Valparaiso and Lima, in March, 1813, Capt. Porter proceeded to the neighbourhood of this group, and cruised there between April and October, for English vessels, where he captured twelve, which were chiefly occupied in the chase of the spermaceti whale. He describes the Gallapagos islands as "being perhaps the most barren and desolate of any known," and so utterly destitute of fresh water, that he was obliged to touch on the coast of America, during the time, to procure a supply of that necessary article. They are chiefly Volcanic piles, and the water that condenses on their summits is absorbed by tufa, slag, and ashes, before it can reach the sea.

From the Gallapagos the crew took a number of the native tortoises for food. These creatures are very large, and frequent there. They inhabit the land, and seldom or never enter the water from choice. Two of them were brought alive to New-York. They bore the voyage of

between two and three months without taking any food. They have been carefully examined, and described. Both were females. The larger had the following characters.

The colour of the buckler and skin was a deep and uniform black.

The head was rather small in proportion to the body, and at pleasure could be drawn out of sight, and concealed behind the fore legs, approximated for its protection.

The back was very convex. The sides prominent and capacious; but the gibbosity was without knobs, asperities, or processes; and merely marked by dividing lines, among the pannels. There were five of these pannels along the back, four on each side, and twenty three in the circumference, making thirty-six in the whole.

The length, measured over the elevation of the buckler, between head and tail, was about two feet and a half. The distance from side to side over the back was almost as great, or nearly twenty-nine inches. The height, as the animal rested on the belly or sternum, was about two feet.

The weight, when she arrived, poor, lean and famished, was eighty pounds.

The fore part of the legs was covered with a thick and hard skin, that by deep indentations resembled the scales of an alligator's hide. Each of her fore feet had five claws; of the hinder, four. And the balls of her feet were prominent and puffed, as if for *walking* over the ground, and not for creeping, or crawling. Such is the *length of her legs, that* her erect posture adds about a foot to her stature.

This individual, weak and exhausted as it was, could move with the weight of a man on its back.

The fore part of the crown of the head was rough, like the legs.

It arrives in its native region, to the magnitude of three hundred pounds, and even more. When full grown and strong, it can travel away with the weight of three or four men. It is very prone to accumulate fat. In cooking the flesh there is no need of employing butter.

It can live, as is said, a year, without food or drink.

The sailors travelled two miles and more inland upon the Gallapagos islands in search of these tortoises, or *turpins* as they called them. When they catch the animals, they carry them in their arms, or on their shoulders, to the boat.

There were more than two hundred on board the Essex. The English whaling vessels that were captured, mostly had some of them. Navigators prize them highly for food, and esteem them as savoury and wholesome. One of the men told me he had seen the same sort of tortoises on the Isles Tristan d' Acunha and Bourbon. Like the camel, the turpins have a stomach or reservoir in which they preserve water to the amount of several quarts for a long time. Voyagers sometimes kill them for the purpose of procuring this water to drink, which they pronounce to be cool and sweet. Commodore Porter told me he had repeatedly tasted it, and could bear witness how good and potable it was. The water the stomach contains is sufficient for cooking the flesh. The Gallapagos are stated to abound in volcanoes, and subterranean fires. They are rocky, peaked and forbidding. There are few springs or brooks of water. With great difficulty and exertion the Essex collected about half a dozen casks; and then sailed for the continent to obtain a further supply. There are no settled or stationary human inhabitants.

The seas abound in excellent fish and green turtle. Cocoa-nuts may be found in some places on shore. And the Guanos lizard may be catched for eating. But it must be remembered that this is the *Sea-Guanos*, a species of lacerta, entirely different from that of the West-Indies. The *Sea-Guanos* of the Gallapagos, swim and feed in the ocean, and go ashore to rest and breed.

The gallant commander of this expedition to the Pacific, has enriched his journal with many facts and observations in natural history. These give to his voyage the air of an undertaking for enlarging the boundaries of knowledge, as well as for diminishing the maritime power of the enemy. Every scientific and patriotic man will unite in the wish that the journal of a navigator, more brave and intelligent than Cook, may be committed to the press. And I heartily concur in the desire signified by the commodore's other friends, that he would lay before the public the information he possesses, of Brazil, Chili, the Gallapagos group, the Marquesas cluster, and the other regions he has visited during his memorable cruise.

Provision of the New-York Legislature for Literary and Scientific Institutions.

By an act passed at the late session of the legislature, one hundred thousand dollars is granted to Union College, for completing the buildings already commenced, and for erecting such others as the trustees may deem requisite; thirty thousand dollars for discharging a debt already contracted by the said trustees; twenty thousand dollars for increasing the library and extending the philosophical and chemical apparatus; and fifty thousand dollars to augment the charity fund of said college.

Forty thousand dollars to Hamilton College.

To Columbia College, the Botanic Garden, on condition that the college establishment be removed to the said tract of land within twelve years.

Thirty thousand dollars to the College of Physicians and Surgeons in the city of New-York, and interest for six years on the sum.

The right of the state to subscribe certain shares in the Utica Bank, transferred to the College of Physicians and Surgeons in the Western District.

Four thousand dollars to the Asbury African Church in the city of New-York, for the payment of a debt and the establishment of a school.

To all these appropriations, we add the sum of twelve thousand dollars, for the New-York Historical Society; making a grand total of two hundred and eighty-six thousand dollars for these valuable purposes.

The amount of all the grants of money made by this act, to be raised by lottery. The governor to appoint the managers. Two classes of the lottery to be drawn in each year; but not to commence until all the lotteries previously authorized by law shall be completed.